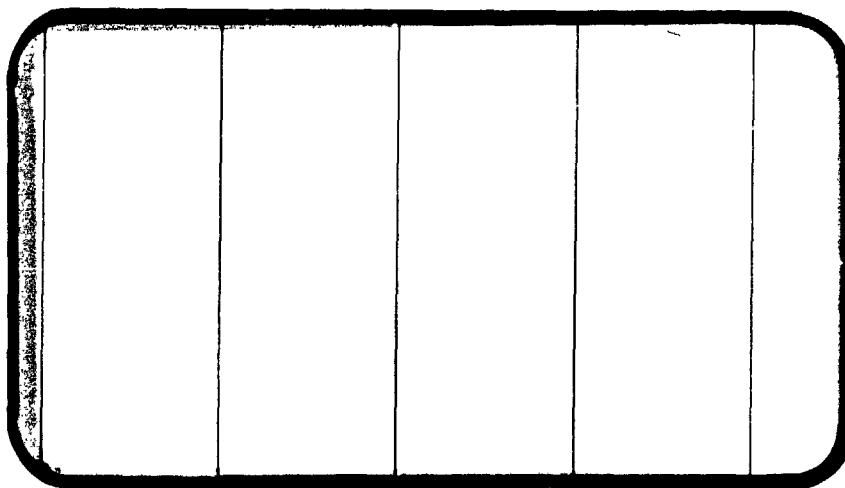




NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA CR-

134416



(NASA-CR-134416) EFFECTS OF AIR
BREATHING ENGINE PLUMES ON SSV ORBITER
SUBSONIC WING PRESSURE DISTRIBUTION
(OA57B), VOLUME 1 (Chrysler Corp.)
552 p HC \$13.00

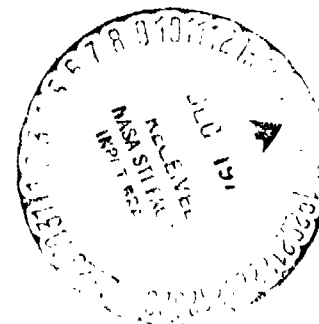
N75-12034

CSCL 22B G3/18 03603

Unclas

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT



JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA Management services

SPACE DIVISION



CHRYSLER
CORPORATION

October, 1974

DMS-DR-2080
NASA CR-134,416
EFFECTS OF AIR BREATHING ENGINE PLUMES
ON SSV ORBITER SUBSONIC
WING PRESSURE DISTRIBUTION (OA57B)
VOLUME 1 OF 2

By
T. Soard
Rockwell International

Prepared under NASA Contract Number NAS9-13247

By
Data Management Services
Chrysler Corporation Space Division
New Orleans, La. 70189

for
Engineering Analysis Division
Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

TEST SPECIFICS:

Test Number NAAL 713
Model Number: 2-0
NASA Series No.: OA57B
Test Data: 18 through 23 September 1973

FACILITY COORDINATOR:

R. B. Russell
Rockwell International, B-1 Division
Los Angeles International Airport
Los Angeles, California 90009

Phone: (213) 617-9151 Ext. 3343

PROJECT ENGINEER:

T. Soard
Rockwell International, B-1 Division
Los Angeles International Airport
Los Angeles, California 90009

Phone: (213) 617-9151 Ext. 3343

DATA MANAGEMENT SERVICES:

Prepared by: Liaison--D. A. Sarver, M. J. Lanfranco
 Operations--R. B. Lowe

Reviewed by: D. E. Poucher, J. L. Glynn

Approved: *N. D. Kemp*
N. D. Kemp, Manager
Data Management Services

Concurrence: *R. D. Swider*
R.D. J. G. Swider, Manager
Flight Technology Branch

Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

EFFECTS OF AIR BREATHING ENGINE PLUMES
ON SSV ORBITER SUBSONIC
WING PRESSURE DISTRIBUTION (OA57B)

By T. Soard*

ABSTRACT

The data presented in this report were obtained during wind tunnel tests of a 0.0405-scale model of the -89B Ferry Configuration of the Space Shuttle Vehicle Orbiter. These tests were conducted in the Rockwell International Low Speed Wind Tunnel (NAAL) during the time period of September 18 to September 23, 1973. NASA Space Shuttle test designation was OA57B.

The primary test objective was to investigate orbiter wing pressure distributions resulting from nacelle plumes above and below the wing. Three six-engine nacelle configurations were tested. One configuration had a twin-podded nacelle mounted above each wing and the others had one mounted below each wing. Both had a centerline twin-podded nacelle mounted below the wing. Wing pressure distribution was determined by locating static pressure bugs on the upper and lower surfaces of the left wing. Pressure bugs were also located on the upper and lower surfaces of the body flap and on the B₁₂ afterbody fairing when it was installed. Base and balance cavity pressures were recorded and a strain gage instrumented beam in the right wing measured elevon hinge moments and normal forces.

Testing was conducted at 3 ground plane heights ($h/b = 0.039, 0.125,$

* Rockwell International

and 0.286), with 4 engine pressure ratios ($P_{TN}/P_{so} = 0, 1.0, 1.3, \text{ and } 1.5$), with elevon deflections of 0° and $\pm 15^\circ$, and with body flap deflections of $-18^\circ, 0^\circ, \text{ and } +20^\circ$. The nominal angle of attack range was -4° to $+20^\circ$ with an angle of sideslip of 0° . A Mach number of 0.200 was maintained throughout the test.

The model was mounted on a 2.5-inch diameter dummy balance using the W-1052-5 sting and W-1092-A-2 adapter, locating the center of rotation at the trailing edge of the root chord.

This report is presented in two volumes. Volume 1 contains the data figures and Volume 2 contains the tabulated source data.

TABLE OF CONTENTS

| <u>VOLUME 1</u> | <u>Page</u> |
|--|-------------|
| ABSTRACT | iii |
| INDEX OF MODEL FIGURES | 2 |
| INDEX OF DATA FIGURES | 3 |
| NOMENCLATURE | 13 |
| CONFIGURATIONS INVESTIGATED | 16 |
| TEST FACILITY | 18 |
| DATA REDUCTION | 19 |
| TABLES | |
| I. TEST CONDITIONS | 23 |
| II. DATA SET/RUN NUMBER COLLATION SUMMARY | 24 |
| III. MODEL DIMENSIONAL DATA | 29 |
| IV. WING PRESSURE CONSTANTS AND LOCATIONS | 38 |
| V. BODY FLAP AND AFTERBODY PRESSURE CONSTANTS | 39 |
| FIGURES | |
| MODEL | 40 |
| DATA | 49 |

INDEX OF MODEL FIGURES

| Figure | Title | Page |
|--------|--|------|
| 1 | Axis systems. | 40 |
| 2 | Model sketches. | |
| a. | J_{40} and J_{41} Nacelle configuration. | 41 |
| b. | J_{42} Nacelle configuration. | 42 |
| c. | Pressure bug location. | 43 |
| 3 | Model photographs. | |
| a. | Model installation. | 44 |
| b. | Pressure bug installation, upper surface of left wing. | 44 |
| c. | Right eleven showing strain gage instrumented beam. | 45 |
| d. | Pressure bug location, upper surface of body flap. | 45 |
| e. | J_{40} configuration of ABPS. | 46 |
| f. | J_{41} configuration of ABPS. | 46 |
| g. | J_{42} configuration of ABPS. | 47 |
| h. | J_{42} left view. | 47 |
| i. | J_{40} top view. | 48 |

INDEX OF DATA FIGURES

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | CONDITIONS VARYING | PAGES |
|------------------|---|--|-----------------------|-------|
| Fig. 4 | ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.0 | (A) | H/B | 1-3 |
| Fig. 5 | ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.3 | (A) | H/B | 4-6 |
| Fig. 6 | ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.5 | (A) | H/B | 7-9 |
| Fig. 7 | ELEVON EFFECTIVENESS WITH J41 AT NOZZLE EXIT PRESSURE RATIO OF 1.0 | (A) | H/B | 10-12 |
| Fig. 8 | ELEVON EFFECTIVENESS WITH J41 AT NOZZLE EXIT PRESSURE RATIO OF 1.3 | (A) | H/B | 13-15 |
| Fig. 9 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.0 | (B) | H/B and ELEVON | 16-18 |
| Fig. 10 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.3 | (B) | H/B and ELEVON | 19-21 |
| Fig. 11 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.5 | (B) | H/B and ELEVON | 22-24 |
| Fig. 12 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J41 AT NOZZLE EXIT PR OF 1.0 | (B) | H/B and ELEVON | 25-26 |
| Fig. 13 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J41 AT NOZZLE EXIT PR OF 1.3 | (B) | H/B and ELEVON | 27-28 |
| Fig. 14 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J42 AT NOZZLE EXIT PR OF 1.0 | (B) | H/B | 29 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | | | CONDITIONS VARYING | PAGES |
|------------------|---|--|-----|-----|-----------------------|--------|
| | | (B) | (B) | (B) | | |
| Fig. 15 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J42 AT NOZZLE EXIT PR OF 1.3 | | | | H/B | 30 |
| Fig. 16 | ELEVON HINGE MOMENT AND NORMAL FORCE WITH J42 AT NOZZLE EXIT PR OF 1.5 | | | | H/B | 31 |
| Fig. 17 | BODY FLAP PRESSURE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDFLAP | (C) | | | PTN/P and H/B | 32-40 |
| Fig. 18 | BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP | (C) | | | PTN/P and H/B | 41-49 |
| Fig. 19 | BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND 0 BDFLAP | (C) | | | PTN/P and H/B | 50-55 |
| Fig. 20 | BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BDFLAP | (C) | | | PTN/P and H/B | 56-61 |
| Fig. 21 | BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BDFLAP | (C) | | | PTN/P and H/B | 62-70 |
| Fig. 22 | BODY FLAP PRESSURE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BDFLAP | (C) | | | PTN/P and H/B | 71-76 |
| Fig. 23 | BODY FLAP PRESSURE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BDFLAP | (C) | | | PTN/P and H/B | 77-82 |
| Fig. 24 | BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BDFLAP | (C) | | | PTN/P and H/B | 83-91 |
| Fig. 25 | INTEGRATED FORCE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDFLAP | (D) | | | PTN/P and H/B | 92-100 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | | CONDITIONS VARYING | PAGES |
|------------------|--|--|--|-----------------------|---------|
| | | | | | |
| Fig. 26 | INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP | (D) | | PTN/P and H/B | 101-109 |
| Fig. 27 | INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND 0 BDFLAP | (D) | | PTN/P and H/B | 110-115 |
| Fig. 28 | INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BDFLAP | (D) | | PTN/P and H/B | 116-121 |
| Fig. 29 | INTEGRATED FORCE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BDFLAP | (D) | | PTN/P and H/B | 122-130 |
| Fig. 30 | INTEGRATED FORCE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BDFLAP | (D) | | PTN/P and H/B | 131-139 |
| Fig. 31 | INTEGRATED FORCE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BDFLAP | (D) | | PTN/P and H/B | 140-148 |
| Fig. 32 | INTEGRATED FORCE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BDFLAP | (D) | | PTN/P and H/B | 149-157 |
| Fig. 33 | BASE PRESSURE AND AXIAL FORCE WITH J40, -15 ELEVON AND -18 BDFLAP | (E) | | PTN/P and H/B | 158-160 |
| Fig. 34 | BASE PRESSURE AND AXIAL FORCE WITH J40, 0 ELEVON AND -18 BDFLAP | (E) | | PTN/P and H/B | 161-163 |
| Fig. 35 | BASE PRESSURE AND AXIAL FORCE WITH J40, 0 ELEVON AND 0 BDFLAP | (E) | | PTN/P and H/B | 164-165 |
| Fig. 36 | BASE PRESSURE AND AXIAL FORCE WITH J40, 0 ELEVON AND 20 BDFLAP | (E) | | PTN/P and H/B | 166-167 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | | CONDITIONS VARYING | PAGES |
|------------------|--|--|--|-----------------------|---------|
| | | | | | |
| Fig. 37 | BASE PRESSURE AND AXIAL FORCE WITH J40, 15 ELEVON AND -18 BDFLAP | (E) | | PTN/P and H/B | 168-170 |
| Fig. 38 | BASE PRESSURE AND AXIAL FORCE WITH J41, 0 ELEVON AND -18 BDFLAP | (E) | | PTN/P and H/B | 171-173 |
| Fig. 39 | BASE PRESSURE AND AXIAL FORCE WITH J41, 15 ELEVON AND -18 BDFLAP | (E) | | PTN/P and H/B | 174-176 |
| Fig. 40 | BASE PRESSURE AND AXIAL FORCE WITH J42, 0 ELEVON AND -18 BDFLAP | (E) | | PTN/P and H/B | 177-179 |
| Fig. 41 | INTEGRATED AFTERBODY FORCE COEFFICIENTS | (F) | | PTN/P | 180-181 |
| Fig. 42 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.0, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 182-186 |
| Fig. 43 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.3, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 187-191 |
| Fig. 44 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.5, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 192-196 |
| Fig. 45 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.0, 15 ELEVON | (G) | | X/C, ALPHA and H/B | 197-201 |
| Fig. 46 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.3, 15 ELEVON | (G) | | X/C, ALPHA and H/B | 202-206 |
| Fig. 47 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.5, 15 ELEVON | (G) | | X/C, ALPHA and H/B | 207-211 |
| Fig. 48 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P = 1.0, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 212-215 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | CONDITIONS VARYING | PAGES |
|------------------|--|--|-----------------------|---------|
| Fig. 49 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P = 1.3, 0 ELEVON | (G) | X/C, ALPHA and H/B | 216-220 |
| Fig. 50 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P = 1.0, 0 ELEVON | (G) | X/C, ALPHA and H/B | 221-225 |
| Fig. 51 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P = 1.3, 0 ELEVON | (G) | X/C, ALPHA and H/B | 226-230 |
| Fig. 52 | WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P = 1.5, 0 ELEVON | (G) | X/C, ALPHA and H/B | 231-235 |
| Fig. 53 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.0, 0 ELEVON | (G) | X/C, ALPHA and H/B | 236-240 |
| Fig. 54 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.3, 0 ELEVON | (G) | X/C, ALPHA and H/B | 241-245 |
| Fig. 55 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.5, 0 ELEVON | (G) | X/C, ALPHA and H/B | 246-250 |
| Fig. 56 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.0, 15 ELEVON | (G) | X/C, ALPHA and H/B | 251-255 |
| Fig. 57 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.3, 15 ELEVON | (G) | X/C, ALPHA and H/B | 256-260 |
| Fig. 58 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P = 1.5, 15 ELEVON | (G) | X/C, ALPHA and H/B | 261-265 |
| Fig. 59 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P = 1.0, 0 ELEVON | (G) | X/C, ALPHA and H/B | 266-269 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | | CONDITIONS VARYING | PAGES |
|------------------|--|--|--|------------------------|---------|
| | | | | | |
| Fig. 60 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P = 1.3, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 270-274 |
| Fig. 61 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P = 1.0, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 275-279 |
| Fig. 62 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P = 1.3, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 280-284 |
| Fig. 63 | WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P = 1.5, 0 ELEVON | (G) | | X/C, ALPHA and H/B | 285-289 |
| Fig. 64 | WING UPPER SURFACE PRESSURE CHORDWISE DISTR WITH J40, PTN/P = 1.0, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 290-294 |
| Fig. 65 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.3, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 295-299 |
| Fig. 66 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.5, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 300-304 |
| Fig. 67 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.0, 15 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 305-309 |
| Fig. 68 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.3, 15 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 310-314 |
| Fig. 69 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.5, 15 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 315-319 |
| Fig. 70 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P = 1.0, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 320-323 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | | CONDITIONS VARYING | PAGES |
|------------------|--|--|--|------------------------|---------|
| | | | | | |
| Fig. 71 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P = 1.3, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 324-328 |
| Fig. 72 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.0, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 329-333 |
| Fig. 73 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.3, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 334-338 |
| Fig. 74 | WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.5, 0 ELEVON | (H) | | 2Y/B, ALPHA AND H/B | 339-343 |
| Fig. 75 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.0, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 344-348 |
| Fig. 76 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.3, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 349-353 |
| Fig. 77 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.5, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 354-358 |
| Fig. 78 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.0, 15 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 359-363 |
| Fig. 79 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.3, 15 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 364-368 |
| Fig. 80 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.5, 15 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 369-373 |
| Fig. 81 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P = 1.0, 0 ELEVON | (H) | | 2Y/B, ALPHA and H/B | 374-377 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | CONDITIONS VARYING | PAGES |
|------------------|---|--|------------------------|---------|
| Fig. 82 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P = 1.3, 0 ELEVON | (H) | 2Y/B, ALPHA and H/B | 378-382 |
| Fig. 83 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.0, 0 ELEVON | (H) | 2Y/B, ALPHA and H/B | 383-387 |
| Fig. 84 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.3, 0 ELEVON | (H) | 2Y/B, ALPHA and H/B | 388-392 |
| Fig. 85 | WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.5, 0 ELEVON | (H) | 2Y/B, ALPHA and H/B | 393-397 |
| Fig. 86 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.0, 0 ELEVON | (I) | 2Y/B, ALPHA and H/B | 398-402 |
| Fig. 87 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.3, 0 ELEVON | (I) | 2Y/B, ALPHA and H/B | 403-407 |
| Fig. 88 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.5, 0 ELEVON | (I) | 2Y/B, ALPHA and H/B | 408-412 |
| Fig. 89 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.0, 15 ELEVON | (I) | 2Y/B, ALPHA and H/B | 413-417 |
| Fig. 90 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.3, 15 ELEVON | (I) | 2Y/B, ALPHA and H/B | 418-422 |
| Fig. 91 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P = 1.5, 15 ELEVON | (I) | 2Y/B, ALPHA and H/B | 423-427 |
| Fig. 92 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P = 1.0, 0 ELEVON | (I) | 2Y/B, ALPHA and H/B | 428-431 |

INDEX OF DATA FIGURES (Continued)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | | | CONDITIONS VARYING | PAGES |
|------------------|--|--|--|--|--------------------------|---------|
| | | | | | | |
| Fig. 93 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P = 1.3, 0 ELEVON | (I) | | | 2Y/B, ALPHA and H/B | 432-436 |
| Fig. 94 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.0, 0 ELEVON | (I) | | | 2Y/B, ALPHA and H/B | 437-441 |
| Fig. 95 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.3, 0 ELEVON | (I) | | | 2Y/B, ALPHA and H/B | 442-446 |
| Fig. 96 | WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P = 1.5, 0 ELEVON | (I) | | | 2Y/B, ALPHA and H/B | 447-451 |
| Fig. 97 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0 | (J) | | | ALPHA, H/B and ELEVON | 452-460 |
| Fig. 98 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3 | (J) | | | ALPHA, H/B and ELEVON | 461-469 |
| Fig. 99 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5 | (J) | | | ALPHA, H/B and ELEVON | 470-478 |
| Fig. 100 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.0 | (J) | | | ALPHA, H/B and ELEVON | 479-484 |
| Fig. 101 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.3 | (J) | | | ALPHA, H/B and ELEVON | 485-490 |
| Fig. 102 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.0 | (J) | | | ALPHA and H/B | 491-493 |

INDEX OF DATA FIGURES (Concluded)

| FIGURE NUMBER | TITLE | SCHEDULE OF COEFFICIENTS PLOTTED | CONDITIONS VARYING | PAGES |
|------------------|--|--|-----------------------|---------|
| Fig. 103 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.3 | (J) | ALPHA and H/B | 494-496 |
| Fig. 104 | PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.5 | (J) | ALPHA and H/B | 497-499 |

SCHEDULE OF COEFFICIENTS PLOTTED:

- (A) CMWING, CNWING versus ELEVON
- (B) CHME, CNE versus ALPHA
- (C) CPBF versus ALPHA
- (D) CMWING, CMWING, CNFLAP, CMFLAP, CNTOTL, CMTOTL versus ALPHA
- (E) CAB, CPBAVE versus ALPHA
- (F) CMABDY, CNABDY, CMTOTL, CNTOTL versus ALPHA
- (G) CP versus 2Y/B
- (H) CP versus X/C
- (I) DELCP versus X/C
- (J) CP versus X/L

NOMENCLATURE

| <u>Symbol</u> | <u>SADSAC Symbol</u> | <u>Definition</u> |
|---------------|--------------------------|--|
| A | | area of influence, ft^2 |
| b | BREF | reference span, inches |
| C_A | CA | axial-force coefficient, axial force/ qS |
| C_{HM} | CHME | hinge-moment coefficient, hinge moment/ $qS_E \bar{c}_E$ |
| C_N | CN | normal-force coefficient, normal force/ qS |
| C_m | CLM | pitching-moment coefficient, pitching moment/ $qS \bar{c}$ |
| C_p | CP | pressure coefficient, $P_{sl} - P_{so}/q$ |
| C.P. | | center of pressure |
| GN_2 | | nitrogen gas |
| XCP | | distance from MRP to C.P. on X axis, inches |
| \bar{c} | LREF | reference length, inches |
| h_{WTE}/b | H/B | ratio of height of wing trailing edge above ground plane to reference span |
| l | | distance from MCR to static pressure tap |
| | MRP | moment reference point |
| | XMRP | moment reference point on X axis |
| | YMRP | moment reference point on Y axis |
| | ZMRP | moment reference point on Z axis |
| P | | pressure, psf |
| q | Q(PSF) | dynamic pressure, psf |
| S | SREF | reference area, ft^2 |
| T | | temperature, $^{\circ}\text{R}$ |

NOMENCLATURE (Continued)

| | | |
|----------------|----------------|---|
| α | ALPHA | angle of attack, degrees |
| β | BETA | angle of sideslip, degrees |
| γ | | ratio of specific heats, $\gamma = 1.4$ for air |
| Λ_{LE} | | leading edge sweep angle, degrees |
| | CMWING | wing pitching moment coefficient |
| | CNWING | wing normal force coefficient |
| δ_e | ELEVON | elevon, surface deflection angle positive deflection, trailing edge down; degrees |
| ΔC_p | DELCP | incremental pressure coefficient |
| CA_b | CAB or CAB1 | base force coefficient, $\frac{\text{base force}}{qS} = A_b (p_b - p_o)/qS$ |
| C_{N_E} | CNE | elevon normal force coefficient |
| | CPBF | body flap pressure coefficient |
| | CPBAVE | average base pressure coefficient |
| | CNTOTL | total normal force coefficient |
| | CMTOTL | total pitching moment coefficient |
| C_p | CP | pressure coefficient $(p_1 - p_o)/q$ |
| x/c | X/C | local chordwise position/wing chord length |
| $Y/b/2$ | 2Y/B or η | local spanwise position/wing semi-span |
| | X/L | local chordwise position/reference length |
| | CNFLAP | body flap normal coefficient |
| | CMFLAP | body flap pitching moment coefficient |
| | CNABDY | afterbody normal force coefficient |
| | CMABDY | afterbody pitching moment coefficient |

NOMENCLATURE (Concluded)

| | | |
|---------------|--------|--|
| P_{TN}/P_o | PTN/P | total nozzle pressure/free stream pressure |
| R_e | RN/L | Reynold's number, RN/L, millions per foot |
| δ_{BF} | BDFLAP | flap, surface deflection angle, positive |
| l_B | | body length, inches |
| | CPSB | base pressure coefficient |
| | CPSAB | side afterbody pressure coefficient |
| | CPBAB | bottom afterbody pressure coefficient |

SUBSCRIPTS

| | |
|----|---------------------------|
| B | base |
| BC | balance cavity |
| E | elevon |
| HM | hinge moment |
| i | index, value at station i |
| L | lower surface |
| l | local |
| N | nozzle |
| o | freestream |
| p | pressure |
| s | static |
| T | total |
| U | upper |

CONFIGURATIONS INVESTIGATED

The model tested was a 0.0405-scale representation of the Rockwell International-89B Space Shuttle Orbiter. The basic model was of the blended wing-body design utilizing a double delta wing ($75^\circ/45^\circ \Lambda_{LE}$), full span elevons (unswept hingeline), and a canopy. To complete the ferry configuration, air breathing engine nacelles were tested in locations above and below the wing as per SS-A00028. Jet plumes were simulated by exhausting compressed GN_2 from all nacelles.

All model components were per VL70-00089B configuration except for the fuselage lines from station 1307 aft and the engine nacelle groupings and locations.

The orbiter model was constructed of wood and aluminum and was mounted on the Task Corporation 2.5-inch Mk IX dummy balance. The following nomenclature was used to designate the various model components:

| Component | Description |
|-----------------|--|
| B ₁₆ | -89B fuselage |
| B ₁₂ | -89B fuselage with base fairing |
| C ₁ | -89B canopy |
| F ₁ | Body flap, ATP baseline |
| J ₄₀ | Air breathing propulsion system consisting of a twin podded nacelle below each wing and a twin podded nacelle on the lower fuselage centerline |
| J ₄₁ | Same as J ₄₀ except engines under wings extended aft an additional 90 inches full scale |

J₄₂

Air breathing propulsion system consisting of a twin podded nacelle above each wing and a twin podded nacelle on the lower fuselage centerline

W₈₇

-89B double delta wing ($75^\circ/45^\circ_{LE}$)

E₁₈

Elevon, full span split, used with wing W₈₇

TEST FACILITY

The North American Aerodynamics Laboratory (NAAL) 7.75 x 11.3-Foot Wind Tunnel is a continuous flow, closed circuit, single return type tunnel capable of speeds up to 200 miles per hour. The test section is vented to atmospheric pressure and is 7.75 x 11 feet wide by 12 feet in length. Power is supplied by a 1250 horsepower nacelle mounted synchronous motor driving a 19 foot, seven blade, laminated birch propeller. The airspeed is controlled by varying the degree of coupling between the motor and propeller by means of a magnetic clutch. A damping screen and honeycomb section in the settling chamber upstream from the contraction cone (ratio 7.53 to 1) minimizes turbulence in the test section. The NAAL Wind Tunnel has been in operation since June 1943 and calibrations are available over a wide range of test conditions.

Tests may be conducted using a variety of mounting systems, e.g., a single strut, double strut, sting strut, reflection plane, cable suspension, and two dimensional wall. Aerodynamic data may be measured by a planar type external balance. An automatic data Acquisition System is used to collect, multiplex, digitize, and record 50 channels of force and/or pressure data on magnetic tape. This data is then rapidly reduced and plotted using automatic data processing equipment and an automatic digital plotter.

DATA REDUCTION

Since only pressure distribution and elevon hinge data were required during the test period, the model was mounted on the Task Mk IX 2.5" dummy balance. Therefore no corrections were made for balance and sting deflection. But standard facility corrections for blockage were applied as required. A base and balance cavity axial force coefficient was calculated as presented below:

$$C_{A_{BC}} = - \left(\frac{P_{BC} - P_{BO}}{q} \right) \left(\frac{A_{BC}}{S} \right)$$

and:

$$C_{A_{Bl}} = - \left(\frac{P_B - P_{BO}}{q} \right) \left(\frac{A_B}{S} \right), \quad P_B = 1/5 (P_{Bl} + \dots + P_{B5})$$

Elevon hinge moments and normal force coefficients were calculated in the following manner:

$$C_{HM} = \frac{HM_E}{q S_E \bar{c}_E}$$

where: HM_E = (gage output) x (calib. factor), in-lbs

S_E = Elevon area, ft^2

\bar{c}_E = M.A.C. of elevon, in

and:

$$C_{N_E} = \frac{HM_E}{q S (\bar{c}_E/2)}$$

S = Reference area, ft^2

DATA REDUCTION (Continued)

Static pressure coefficients were calculated as shown below:

$$C_{p_i} = \left(\frac{P_{s_i} - P_{s_o}}{q} \right)$$

$$\text{Wing } i_{MAX} = 30$$

$$\text{Body flap } i_{MAX} = 3$$

$$\text{Afterbody } i_{MAX} = 3$$

where:

$$P_{s_i} = \text{local static pressure, psf}$$

$$P_{s_o} = \text{Tunnel static pressure, psf}$$

$$q = \text{Tunnel dynamic pressure, psf}$$

Wing panel, body flap, afterbody, and total normal force and pitching moment (about 66% body length) coefficients were calculated as presented below:

$$C_N = \sum_1^{i_{MAX}} (C_{p_{i_l}} - C_{p_{i_u}}) \frac{A_{p_i}}{S}$$

where: $C_{p_{i_u}}$ = Upper surface pressure coefficient
(assume afterbody $C_{p_{i_u}} = 0.0$)

$C_{p_{i_l}}$ = Lower surface pressure coefficient

A_{p_i} = Area of influence, ft², (see tables IV and V for values)

S = Reference area, ft²

and:

$$C_{m_{0.66l_B}} = \sum_1^{i_{MAX}} C_{N_i} \frac{l_i}{c}$$

DATA REDUCTION (Continued)

Where:

l_1 = Distance of tap from moment reference point, in, see tables IV and V

\bar{c} = Reference length, in

and:

$$x_{CP} = \frac{C_m}{C_N} (\bar{c})$$

and:

$$C_{N \text{ Total}} = C_{N \text{ Wing}} + C_{N \text{ Body flap}} + C_{N \text{ Afterbody}}$$

and:

$$C_m \text{ Total} = C_{m \text{ Wing}} + C_{m \text{ Body flap}} + C_{m \text{ Afterbody}}$$

and:

$$C_m/C_N \text{ Total} = C_m/C_N \text{ Wing} + C_m/C_N \text{ Body flap} + C_m/C_N \text{ Afterbody}$$

The following reference dimensions and constants were used in data reduction.

Basic constants:

| Symbol | Definition | Model Scale |
|----------------|--|-------------|
| S | Reference area, ft ² | 4.412 |
| b | Reference span, in | 37.935 |
| \bar{c} | Reference length, in | 19.230 |
| S _E | Elevon reference area, ft ² | 0.336 |
| \bar{c}_E | Elevon reference length, in | 3.44 |

DATA REDUCTION (Concluded)

| | | |
|-------|---|---------|
| A_N | Nacelle nozzle exit area, ft ² | 0.01278 |
| XMRP | Moment reference point on X axis, in | 43.598 |
| YMRP | Moment reference point on Y axis, in | 0.0 |
| ZMRP | Moment reference point on Z axis, in | -0.405 |

TABLE I.

[illegible]

TABLE II.

| TEST: 0A578 (NAAL 713) | | | | | | | | | | DATE: SEPT. 18-23, 1973 | | | | | | | | | |
|---------------------------------------|---------------------|----------|---------|-------------------|------------|------------|------------|--|--|-------------------------|--------------|--|--|--|--|--|--|--|--|
| DATA SET/RUN NUMBER COLLATION SUMMARY | | | | | | | | | | | | | | | | | | | |
| DATA SET IDENTIFIER | CONFIGURATION | SCHD. | | PARAMETERS/VALUES | | | | | | NO. OF RUNS | MACH NUMBERS | | | | | | | | |
| | | α | β | $\gamma/2$ | $\gamma/6$ | δf | δe | | | | | | | | | | | | |
| RDV 001 | B16 C5 F143 W87 E18 | 10 | 0 | VAR | 0.091 | -18 | 0 | | | 1 | 20 | | | | | | | | |
| 002 | | 10 | | VAR | | | | | | | 1 | | | | | | | | |
| 003 | | A | | 1.0 | | | | | | | 2 | | | | | | | | |
| 004 | | | | 1.3 | | | | | | | 3 | | | | | | | | |
| 005 | | | | 1.5 | | | | | | | 4 | | | | | | | | |
| 006 | | B | | 1.0 | 125 | | | | | | 5 | | | | | | | | |
| 007 | | | | 1.3 | | | | | | | 6 | | | | | | | | |
| 008 | | | | 1.5 | | | | | | | 7 | | | | | | | | |
| 009 | | | | 1.5 | | 0 | | | | | 8 | | | | | | | | |
| 010 | | | | 1.3 | | | | | | | 9 | | | | | | | | |
| 011 | | | | 1.0 | | | | | | | 10 | | | | | | | | |
| 012 | | | | 1.5 | 286 | | | | | | 11 | | | | | | | | |
| 013 | | | | 1.0 | | | | | | | 12 | | | | | | | | |
| 014 | | | | 1.3 | | | | | | | 13 | | | | | | | | |
| 015 | | | | 1.0 | | -18 | | | | | 14 | | | | | | | | |
| 016 | | | | 1.5 | | | | | | | 15 | | | | | | | | |
| 017 | | | | 1.3 | | | | | | | 16 | | | | | | | | |
| 018 | | | | 1.0 | | | | | | | 17 | | | | | | | | |
| | | | | | | | | | | | 18 | | | | | | | | |
| | | | | | | | | | | TEST RUN NUMBERS | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

α OR β SCHEDULES
 $\alpha(A) = 10, 15, 20$
 $\alpha(B) = -4, 0, 5, 10, 15, 20$
 *DEPENDENT VARIABLES ARE LISTED IN THE TABULATED SOURCE DATA (VOLUME 2).

TABLE II. - Continued.

| TEST: 04578 (NAAL 713) | | DATA SET/RUN NUMBER COLLATION SUMMARY | | | | | | | | | | DATE: SEPT 18-23, 1973 | |
|---|--|---------------------------------------|---------|-------------------|----------|------------|---------|--------|----------|-------------|--------------|------------------------|-----------------|
| DATA SET IDENTIFIER | CONFIGURATION | SCHD. | | PARAMETERS/VALUES | | | | | | NO. OF RUNS | MACH NUMBERS | | TEST RUN NUMBER |
| | | α | β | γ | δ | ϵ | ζ | η | θ | | | | |
| RDN 019 | B ₆ C ₅ F ₁ J ₄₀ W ₈₇ E ₁₈ | B | 0 | 1.5 | 286 | +20 | 0 | | | 1 | 19 | | |
| 020 | | | | 1.3 | | | | | | | 20 | | |
| 021 | | | | 1.0 | | | | | | | 21 | | |
| 022 | | | | 1.5 | 125 | | | | | | 22 | | |
| 023 | | | | 1.3 | | | | | | | 23 | | |
| 024 | | | | 1.0 | | | | | | | 24 | | |
| 025 | | A | | 1.5 | | 0 | | | | | 25 | | |
| 026 | | | | 1.3 | | | | | | | 26 | | |
| 027 | | | | 1.0 | | | | | | | 27 | | |
| 028 | | B | | 1.5 | 125 | -18 | +15 | | | | 28 | | |
| 029 | | | | 1.3 | | | | | | | 29 | | |
| 030 | | | | 1.0 | | | | | | | 30 | | |
| 031 | | A | | 1.5 | 039 | | | | | | 31 | | |
| 032 | | | | 1.3 | | | | | | | 32 | | |
| 033 | | | | 1.0 | | | | | | | 33 | | |
| 034 | | B | | 1.5 | 286 | | | | | | 34 | | |
| 035 | | | | 1.3 | | | | | | | 35 | | |
| 036 | | | | 1.0 | | | | | | | 36 | | |
| <div> <div> α OR β </div> <div> SCHEDULES </div> </div> <div> $\alpha(A) = 10, 15, 20$ $\alpha(B) = -4.0, 5.10, 15.20$ </div> | | | | | | | | | | | | | |
| * DEPENDENT VARIABLES ARE LISTED IN THE TABULATED SOURCE DATA (VOLUME 1). | | | | | | | | | | | | | |

TABLE II. - Continued.

TEST: 04A57B (N414 713)

DATE: SEPT 18-23, 1973

DATA SET / RUN NUMBER COLLATION SUMMARY

TEST RUN NUMBERS

| DATA SET IDENTIFIER | CONFIGURATION | SCHD. | | PARAMETERS/VALUES | | | | | NO. OF RUNS | MACH NUMBERS | |
|---------------------|-------------------|----------|---------|-------------------|-------|------------|------------|----|-------------|--------------|--|
| | | α | β | M/δ | h/b | δf | δe | 20 | | 37 | |
| RUN 037 | B16C5F, J40W87E18 | B | 0 | 1.5 | 286 | -18 | -15 | 1 | | | |
| 038 | | | | 1.3 | | | | | 37 | | |
| 039 | | | | 1.0 | | | | | 38 | | |
| 040 | | A | | 1.5 | 039 | | | | 39 | | |
| 041 | | | | 1.3 | | | | | 40 | | |
| 042 | | | | 1.0 | | | | | 41 | | |
| 043 | | B | | 1.5 | 125 | | | | 42 | | |
| 044 | | | | 1.3 | | | | | 43 | | |
| 045 | | | | 1.0 | | | | | 44 | | |
| 046 | B16C5F, J41W87E18 | | | 1.3 | | | -15 | | 45 | | |
| 047 | | | | 1.0 | | | | | 46 | | |
| 048 | | | | 1.3 | 039 | | | | 47 | | |
| 049 | | | | 1.0 | 039 | | | | 48 | | |
| 050 | | | | 1.3 | 286 | | | | 49 | | |
| 051 | | | | 1.0 | | | | | 50 | | |
| 052 | | | | 1.3 | | | 0 | | 51 | | |
| 053 | | | | 1.0 | | | | | 52 | | |
| 054 | | | | 1.3 | 039 | | | | 53 | | |
| | | | | | | | | | 54 | | |

7

13

19

25

31

37

43

49

55

61

67

73

COEFFICIENTS

α OR β

SCHEDULES

$\alpha(A) = 10, 15, 20$

$\alpha(B) = -4, 0, 5, 10, 15, 20$

DEPENDENT VARIABLES ARE LISTED IN THE TABULATED SOURCE DATA (VOLUME 2).

TABLE II. - Continued.

| DATA SET / RUN NUMBER COLLATION SUMMARY | | | | | | | | | | DATE: SEPT 18-23, 1973 | | | | | | | | | |
|---|-----------------|-------|---|-------------------|------|-----|----|--|--|------------------------|--------------|----|--|--|--|--|--|--|--|
| DATA SET IDENTIFIER | CONFIGURATION | SCHD. | | PARAMETERS/VALUES | | | | | | NO. OF RUNS | MACH NUMBERS | | | | | | | | |
| | | a | B | 7a | 7b | 8f | 8e | | | | | | | | | | | | |
| R2N 055 | B16C5FJ41W87E18 | B | 0 | 1.3 | .039 | -18 | 0 | | | | | 20 | | | | | | | |
| 056 | | | | 1.0 | .039 | | | | | | | 55 | | | | | | | |
| 057 | | | | 1.3 | .125 | | | | | | | 56 | | | | | | | |
| 058 | | | | 1.0 | | | | | | | | 57 | | | | | | | |
| 059 | B16C5FJ42W87E18 | | | 1.5 | | | | | | | | 58 | | | | | | | |
| 060 | | | | 1.3 | | | | | | | | 59 | | | | | | | |
| 061 | | | | 1.0 | | | | | | | | 60 | | | | | | | |
| 062 | | A | | 1.5 | .039 | | | | | | | 61 | | | | | | | |
| 063 | | | | 1.3 | | | | | | | | 62 | | | | | | | |
| 064 | | | | 1.0 | | | | | | | | 63 | | | | | | | |
| 065 | | B | | 1.5 | .125 | | | | | | | 64 | | | | | | | |
| 066 | | | | 1.3 | | | | | | | | 65 | | | | | | | |
| 067 | | | | 1.0 | | | | | | | | 66 | | | | | | | |
| 068 | | | | 1.5 | .286 | | | | | | | 67 | | | | | | | |
| 069 | | | | 1.3 | | | | | | | | 68 | | | | | | | |
| 070 | | | | 1.0 | | | | | | | | 69 | | | | | | | |
| 071 | B12C5J42W37E13 | | | 1.3 | | | | | | | | 70 | | | | | | | |
| 072 | | | | 1.0 | | | | | | | | 71 | | | | | | | |
| | | | | | | | | | | | | 72 | | | | | | | |

TEST: 0A57B (NAAL 713)

DATE: SEPT 18-23, 1973

DATA SET / RUN NUMBER COLLATION SUMMARY

| DATA SET IDENTIFIER | CONFIGURATION | SCHD. | a | B | 7a | 7b | 8f | 8e | PARAMETERS/VALUES | NO. OF RUNS | MACH NUMBERS |
|---------------------|-----------------|-------|---|-----|------|-----|----|----|-------------------|-------------|--------------|
| R2N 055 | B16C5FJ41W87E18 | B | 0 | 1.3 | .039 | -18 | 0 | | | | |
| 056 | | | | 1.0 | .039 | | | | | | |
| 057 | | | | 1.3 | .125 | | | | | | |
| 058 | | | | 1.0 | | | | | | | |
| 059 | B16C5FJ42W87E18 | | | 1.5 | | | | | | | |
| 060 | | | | 1.3 | | | | | | | |
| 061 | | | | 1.0 | | | | | | | |
| 062 | | A | | 1.5 | .039 | | | | | | |
| 063 | | | | 1.3 | | | | | | | |
| 064 | | | | 1.0 | | | | | | | |
| 065 | | B | | 1.5 | .125 | | | | | | |
| 066 | | | | 1.3 | | | | | | | |
| 067 | | | | 1.0 | | | | | | | |
| 068 | | | | 1.5 | .286 | | | | | | |
| 069 | | | | 1.3 | | | | | | | |
| 070 | | | | 1.0 | | | | | | | |
| 071 | B12C5J42W37E13 | | | 1.3 | | | | | | | |
| 072 | | | | 1.0 | | | | | | | |

TEST RUN NUMBERS

10, 15, 20

COEFFICIENTS

$\alpha(A) = 10, 15, 20$

$\alpha(B) = -4, 0, 5, 10, 15, 20$

SCHEDULES

a OR B

* DEPENDENT VARIABLES ARE LISTED IN THE TABULATED SOURCE DATA (VOLUME 2).

TABLE II. - Concluded.

| TEST: 0A57B (NAAL 713) | | | | | | | | | | DATE: SEPT 18-23, 1973 | | | | | | | | | | |
|---------------------------------------|---|----------|---------|-------------------|----------|------------|---------|--------|----------|------------------------|---------------|----|------------------|--|--|--|--|--|--|--|
| DATA SET/RUN NUMBER COLLATION SUMMARY | | | | | | | | | | | | | | | | | | | | |
| DATA SET IDENTIFIER | CONFIGURATION | SCHD. | | PARAMETERS/VALUES | | | | | | NO. OF RUNS | MACH. NUMBERS | | TEST RUN NUMBERS | | | | | | | |
| | | α | β | γ | δ | ϵ | ζ | η | θ | | | | | | | | | | | |
| R2V073 | B ₁₂ C ₅ F ₁ J ₁₂ W ₈₇ E ₁₈ | B | 0 | 1.3 | 2.86 | +20 | 0 | | | | | 20 | 73 | | | | | | | |
| ↓ 074 | ↓ | ↓ | ↓ | 1.0 | ↓ | ↓ | ↓ | | | | | 74 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

TABLE III. - MODEL DIMENSIONAL DATA

MODEL COMPONENT: BODY - B12 Body

GENERAL DESCRIPTION: Fuselage, 2A configuration with base fairing,
lightweight orbiter per Rockwell lines VL70-000103

Scale Model = 0.0405

DRAWING NUMBER: SS-A00102
VL70-000103

| <u>DIMENSIONS:</u> | <u>FULL-SCALE</u> | <u>MODEL SCALE</u> |
|------------------------|-------------------|--------------------|
| Length - in. | <u>1705.0</u> | <u>69.05250</u> |
| Max. Width - in. | <u> </u> | <u> </u> |
| Max. Depth - in. | <u>248.0</u> | <u>10.0440</u> |
| Fineness Ratio | <u>6.875</u> | <u>6.875</u> |
| Area - Ft ² | | |
| Max. Cross-Sectional | <u>355.278</u> | <u>0.58274</u> |
| Planform | <u> </u> | <u> </u> |
| Wetted | <u> </u> | <u> </u> |
| Base | <u> </u> | <u> </u> |

TABLE III. - Continued.

MODEL COMPONENT: BODY - B16

GENERAL DESCRIPTION: -89B Fuselage

Scale Model = 0.0405

DRAWING NUMBER: VL72-000089

| <u>DIMENSIONS:</u> | <u>FULL-SCALE</u> | <u>MODEL SCALE</u> |
|------------------------|-------------------|--------------------|
| Length - in. | <u>1328.3</u> | <u>53.796</u> |
| Max. Width - in. | <u> </u> | <u> </u> |
| Max. Depth - in. | <u>248.0</u> | <u>10.044</u> |
| Fineness Ratio - in. | <u>5.35605</u> | <u>5.35605</u> |
| Area - Ft ² | | |
| Max. Cross-Sectional | <u>355.278</u> | <u>0.583</u> |
| Planform | <u> </u> | <u> </u> |
| Wetted | <u> </u> | <u> </u> |
| Base | <u> </u> | <u> </u> |

TABLE III. - Continued.

MODEL COMPONENT: CANOPY - C5GENERAL DESCRIPTION: -89B CanopyScale Model = 0.0405DRAWING NUMBER VI.70-000092

| <u>DIMENSION:</u> | <u>FULL SCALE</u> | <u>MODEL SCALE</u> |
|--|-------------------|--------------------|
| Length (Sta Fwd Bulkhead) | 391.0 | |
| Max Width (T.E. Bulkhead) | 560.0 | |
| Max Depth (WPZ. = 421.922 to Z. = 500) | | |
| Fineness Ratio | | |
| Area | | |
| Max Cross-Sectional | | |
| Planform | | |
| Wetted | | |
| Base | | |
| Sta. Fwd. Bulkhead, Fus. Sta | 391.00 | 15.836 |
| Sta. T.E. , Fus. Sta. | 560. | 22.680 |

TABLE III. - Continued.

MODEL COMPONENT: Body Flap - F1

GENERAL DESCRIPTION: Body Flap Located on Lower Aft Portion of
Fuselage Trailing Edge

Scale Model = .0405

DRAWING NUMBER: VL70-000003A

| <u>DIMENSIONS:</u> | <u>FULL-SCALE</u> | <u>MODEL SCALE</u> |
|-------------------------|-------------------|--------------------|
| Length in. | <u>236.54</u> | <u>9.580</u> |
| Flap L.E. Fus. Sta. in. | <u>1528.30</u> | <u>61.896</u> |
| Flap T.E. Fus. Sta. in. | <u>1650.56</u> | <u>66.848</u> |
| Span in. | <u>236.54</u> | <u>9.580</u> |
| Area ft ² | | |
| Max. Cross-Sectional | | |
| Planform | <u>199.75</u> | <u>0.328</u> |
| Wetted | | |
| Base | | |

TABLE 111. - Continued.

MODEL COMPONENT: ELEVON E-18GENERAL DESCRIPTION: Unswep hinge line elevon used on wing W87Scale Model = 0.0405DRAWING NUMBER: VL70-000093

| <u>DIMENSIONS:</u> | <u>FULL-SCALE</u> | <u>MODEL SCALE</u> |
|---|-------------------|--------------------|
| Area - FT^2 | <u>205.52</u> | <u>0.337</u> |
| Span (equivalent) - IN. | <u>353.34</u> | <u>14.310</u> |
| Inb'd equivalent chord | <u>114.78</u> | <u>4.649</u> |
| Outb'd equivalent chord | <u>55.00</u> | <u>2.228</u> |
| Ratio movable surface chord/ total surface chord | | |
| At Inb'd equiv. chord | <u>.208</u> | <u>.208</u> |
| At Outb'd equiv. chord | <u>.400</u> | <u>.400</u> |
| Sweep Back Angles, degrees | | |
| Leading Edge | <u>0.00</u> | <u>0.00</u> |
| Tailing Edge | <u>-10.24</u> | <u>-10.24</u> |
| Hingeline | <u>0.00</u> | <u>0.00</u> |
| Area Moment (Normal to hinge line) - FT^3 | <u>1548.07</u> | <u>2.539</u> |
| Product of Area Moment | | |

TABLE III. - Continued.

MODEL COMPONENT: AIR BREATHING PROPULSION SYSTEM - J₄₀GENERAL DESCRIPTION: One Twin-podded nacelle under each wing plus one
bottom centerline twin-podded nacelle.

Scale: 0.0405

DRAWING NUMBER: SS-A00028

| DIMENSIONS: | FULL SCALE | MODEL SCALE |
|--|----------------------------|-------------------|
| Length - In. | <u>231.580</u> | <u>9.379</u> |
| Max. Width - In. | <u>52.000</u> | <u>2.106</u> |
| Max. Depth - In. | <u>52.000</u> | <u>2.106</u> |
| Fineness Ratio | | |
| Area | | |
| Max Cross-Sectional - IN. ² | <u>2123.717</u> | <u>3.483</u> |
| Nozzle - In. ² | <u>1122.327</u> | <u>1.841</u> |
| Wetted | <u> </u> | <u> </u> |
| Base | <u> </u> | <u> </u> |
| Forebody Nose | Wing | Q |
| Model Station - In. | <u>38.88</u> | <u>38.88</u> |
| Water Line - In. | <u>10.328</u> | <u>9.577</u> |
| Thrust Line | OUTB'D INB'D | Q |
| Butt Line-In | <u>11.117</u> <u>8.567</u> | <u>0.0</u> |
| Incidence - D.g. | <u>+4°</u> | <u>+4°</u> |

TABLE III. - Continued.

MODEL COMPONENT: AIR BREATHING PROPULSION SYSTEM - J₄₁

GENERAL DESCRIPTION: One twin-podded nacelle above each wing plus one
bottom centerline twin podded nacelle. Engines 1, 2, 5, and 6 have been
extended 90 inches full-scale.

SCALE: 0.0405

DRAWING NUMBER: SS-A00028

| DIMENSIONS: | FULL SCALE | MODEL SCALE |
|---|----------------------------|-------------------|
| Length - In. | <u>321.58</u> | <u> </u> |
| Max. Width | <u>52.000</u> | <u>2.106</u> |
| Max. Depth | <u>52.000</u> | <u>2.106</u> |
| Fineness Ratio | <u> </u> | <u> </u> |
| Area | | |
| Max. Cross-Sectional - In. ² | <u>2123.717</u> | <u>3.843</u> |
| Nozzle - In. ² | <u>1122.327</u> | <u>1.841</u> |
| Wetted | <u> </u> | <u> </u> |
| Base | <u> </u> | <u> </u> |
| Forebody Nose | <u>Wing</u> | <u>C</u> |
| Model Station - In. | <u>38.88</u> | <u>38.88</u> |
| Water Line - In. | <u>15.15</u> | <u>9.577</u> |
| Thrust Line | <u>Out'd</u> <u>Inb'd</u> | <u>5</u> |
| Butt Line - In. | <u>11.117</u> <u>8.567</u> | <u>0.0</u> |
| Incidence - Deg. | <u>0°</u> | <u>+ 4°</u> |

TABLE III. - Continued.

MODEL COMPONENT: AIR BREATHING PROPULSION SYSTEM - J42GENERAL DESCRIPTION: One twin-podded nacelle above each wing plus one bottom centerline twin-podded nacelle.

SCALE: 0.0405

DRAWING NUMBER: SS-A00028

DIMENSIONS:

| | | <u>FULL SCALE</u> | <u>MODEL SCALE</u> |
|----------------------|------------------|-------------------|--------------------|
| Length | | <u>231.580</u> | <u>9.379</u> |
| Max. Width | | <u>52.000</u> | <u>2.106</u> |
| Max. Depth | | <u>52.000</u> | <u>2.106</u> |
| Fineness Ratio | | <u> </u> | <u> </u> |
| Area | | | |
| Max. Cross-Sectional | In. ² | <u>2123.717</u> | <u>3.843</u> |
| Nozzle - | In. ² | <u>1122.327</u> | <u>1.841</u> |
| Wetted | | <u> </u> | <u> </u> |
| Base | | <u> </u> | <u> </u> |
| Forebody Nose | | <u>WING</u> | <u>Q</u> |
| Model Station - | In. | <u>38.88</u> | <u>38.88</u> |
| Water Line - | In. | <u>15.15</u> | <u>9.577</u> |
| Thrust Line | | <u>Outb'd</u> | <u>Inb'd</u> |
| Butt Line - | In. | <u>11.117</u> | <u>8.567</u> |
| Incidence - | Deg. | <u>0°</u> | <u>4°</u> |

TABLE III. - Concluded.

MODEL COMPONENT: WING, W87GENERAL DESCRIPTION: Double delta wing (75° /45° ALE)

SCALE MODEL: 0.0405

DRAWING NUMBER: VL70-000093

DIMENSIONS:

FULL-SCALEMODEL SCALETOTAL DATAArea - ft²

Planform

Wetted

Span - equivalent

Aspect Ratio

Rate of Taper

Taper Ratio

Dihedral Angle, deg. @ X/C=75.33%

Incidence Angle, degrees

Aerodynamic Twist, degrees

Toe-In Angle

Cant Angle

Sweep-Back Angles, degrees

Leading Edge

Trailing Edge

0.25 Element Line

Chords:

Root (Wing Sta. 0.0)

Tip (equivalent)

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

Airfoil Section

Root

Tip

EXPOSED DATAArea - ft²

Span (equivalent) - ft.

Aspect Ratio

Taper Ratio

Chords - in.

Root

Tip

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

Leading Edge Cuff

Planform Area - ft²

L.E. Intersects Fus. @ Sta.

L.E. Intersects Wing @ Sta.

TABLE IV. - WING PRESSURE CONSTANTS AND LOCATIONS

| C_{p_i} | x/c | η | A_{p_i}/S | l_i/\bar{c} |
|-----------|-------|--------|-------------|---------------|
| i=1 | 15 | 0 | .0732 | .282 |
| 7 | 15 | 33.4 | .0592 | .019 |
| 13 | 15 | 52.0 | .0355 | -.131 |
| 19 | 15 | 66.3 | .0355 | -.246 |
| 25 | 15 | 87.6 | .0236 | -.418 |
| 2 | 30 | 0 | .0489 | -.065 |
| 8 | 30 | 33.4 | .0395 | -.122 |
| 14 | 30 | 52.0 | .0236 | -.247 |
| 20 | 30 | 66.3 | .0223 | -.332 |
| 26 | 30 | 87.6 | .0157 | -.460 |
| 3 | 45 | 0 | .0489 | -.152 |
| 9 | 45 | 33.4 | .0395 | -.263 |
| 15 | 45 | 52.0 | .0236 | -.363 |
| 21 | 45 | 66.3 | .0223 | -.419 |
| 27 | 45 | 87.6 | .0157 | -.502 |
| 4 | 60 | 0 | .0489 | -.369 |
| 10 | 60 | 33.4 | .0395 | -.404 |
| 16 | 60 | 52.0 | .0236 | -.479 |
| 22 | 60 | 66.3 | .0223 | -.505 |
| 28 | 60 | 87.6 | .0157 | -.544 |
| 5 | 75 | 0 | .0489 | -.586 |
| 11 | 75 | 33.4 | .0395 | -.545 |
| 17 | 75 | 52.0 | .0236 | -.595 |
| 23 | 75 | 66.3 | .0223 | -.592 |
| 29 | 75 | 87.6 | .0157 | -.586 |
| 6 | 90 | 0 | .0489 | -.803 |
| 12 | 90 | 33.4 | .0395 | -.686 |
| 18 | 90 | 52.0 | .0236 | -.711 |
| 24 | 90 | 66.3 | .0223 | -.679 |
| 30 | 90 | 87.6 | .0157 | -.628 |

Note: Values identical for upper and lower surface

TABLE V. - BODY FLAP AND AFTERBODY PRESSURE CONSTANTS

Body Flap Pressure Constants and Locations

| Location | A_{p_i}/S | l_i/\bar{c} |
|----------|-------------|---------------|
| 1 | .0170 | -1.0399 |
| 2 | .0160 | -1.0399 |
| 3 | .0170 | -1.0399 |

Note: Values identical for upper and lower surface

Afterbody Pressure Constants and Locations*

| Location | A_{p_i}/S | l_i/\bar{c} |
|----------|-------------|---------------|
| 1 | .0479 | -1.030 |
| 2 | .0479 | -1.191 |
| 3 | .0479 | -1.373 |

- Note: 1. Values identical for side and lower surfaces
 2. Assume that all C_p upper = 0.0 for afterbody only
 3. Side not utilized for integration

* Afterbody installed during runs 71 and 72 only

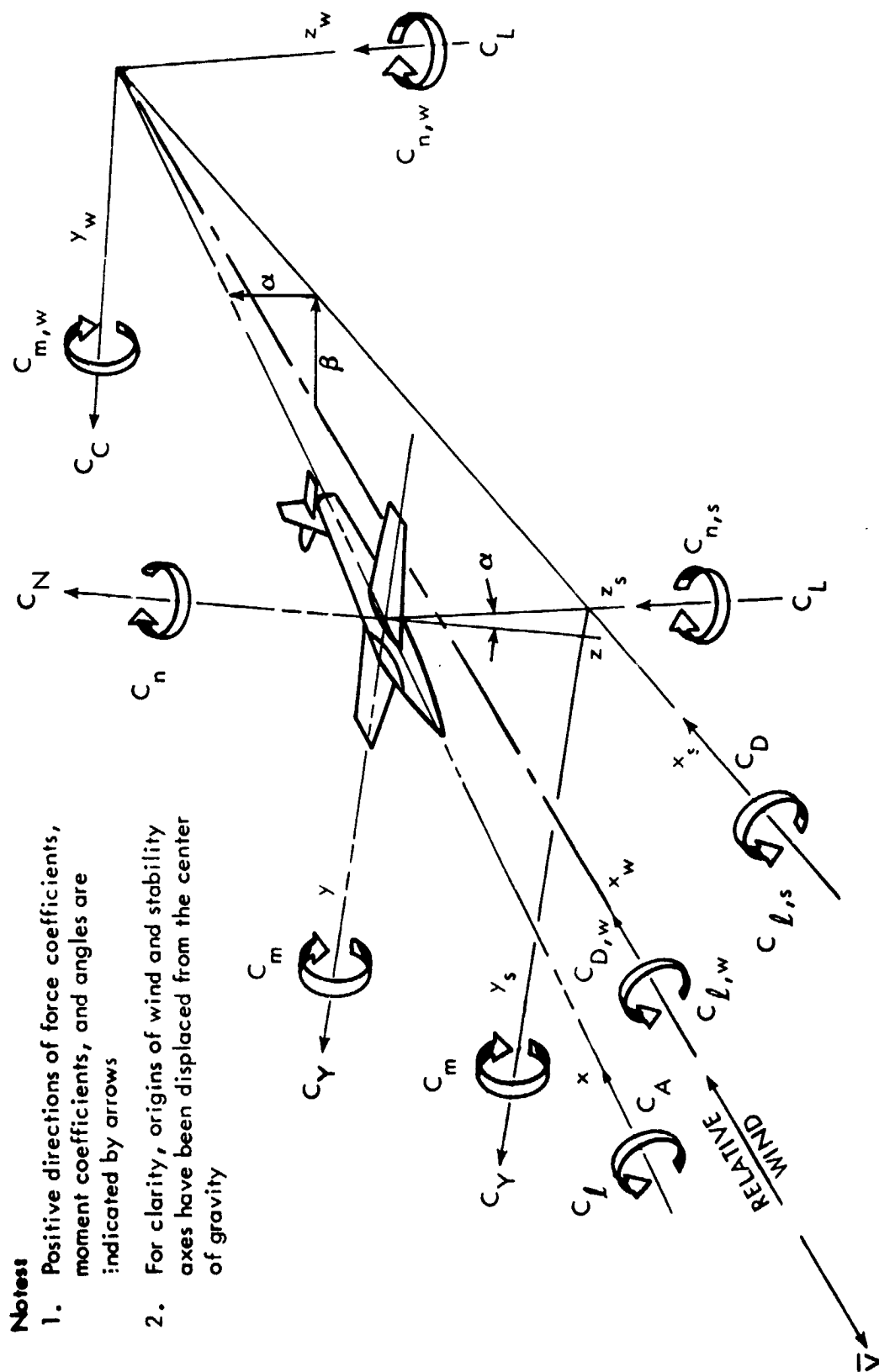
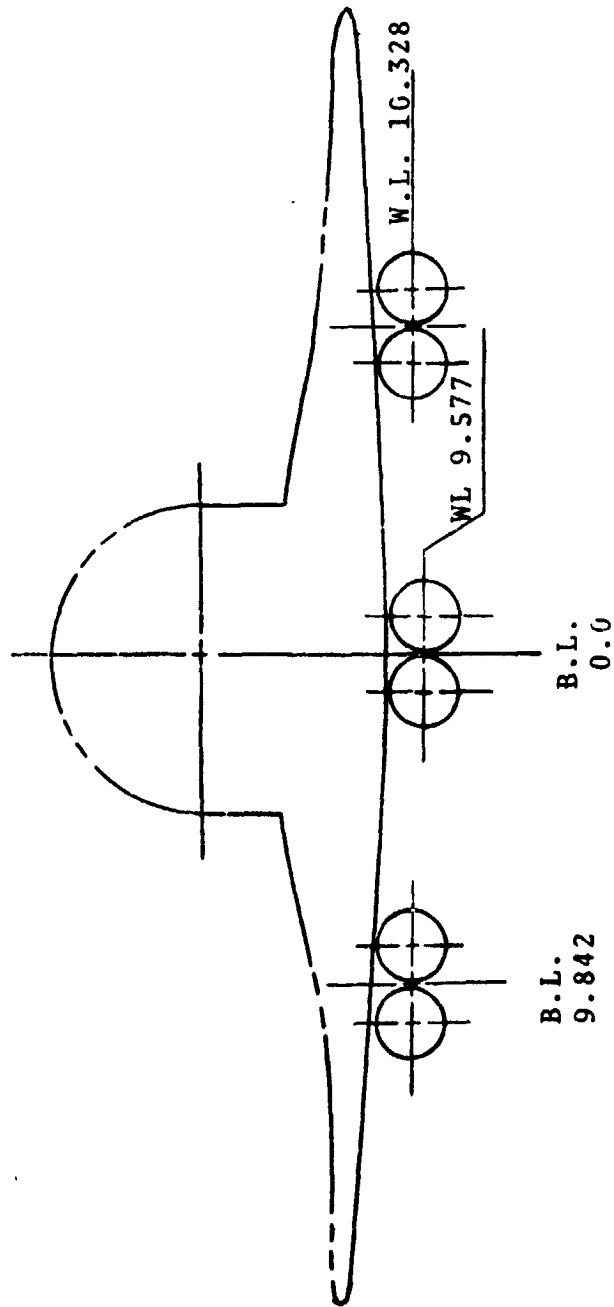


Figure 1. - Axis systems.

- Notes:**
1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
 2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

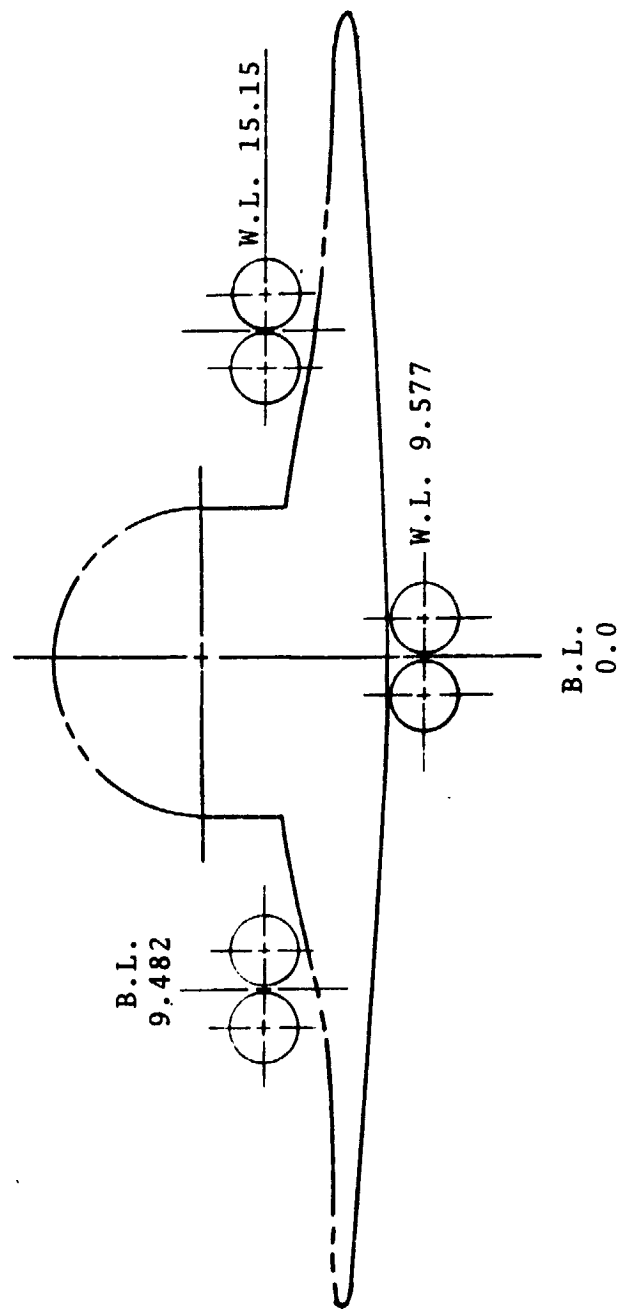
J40

J41 - As Shown With 90-Inch (Full Scale) Insert In Engines 1, 2, 5, and 6.



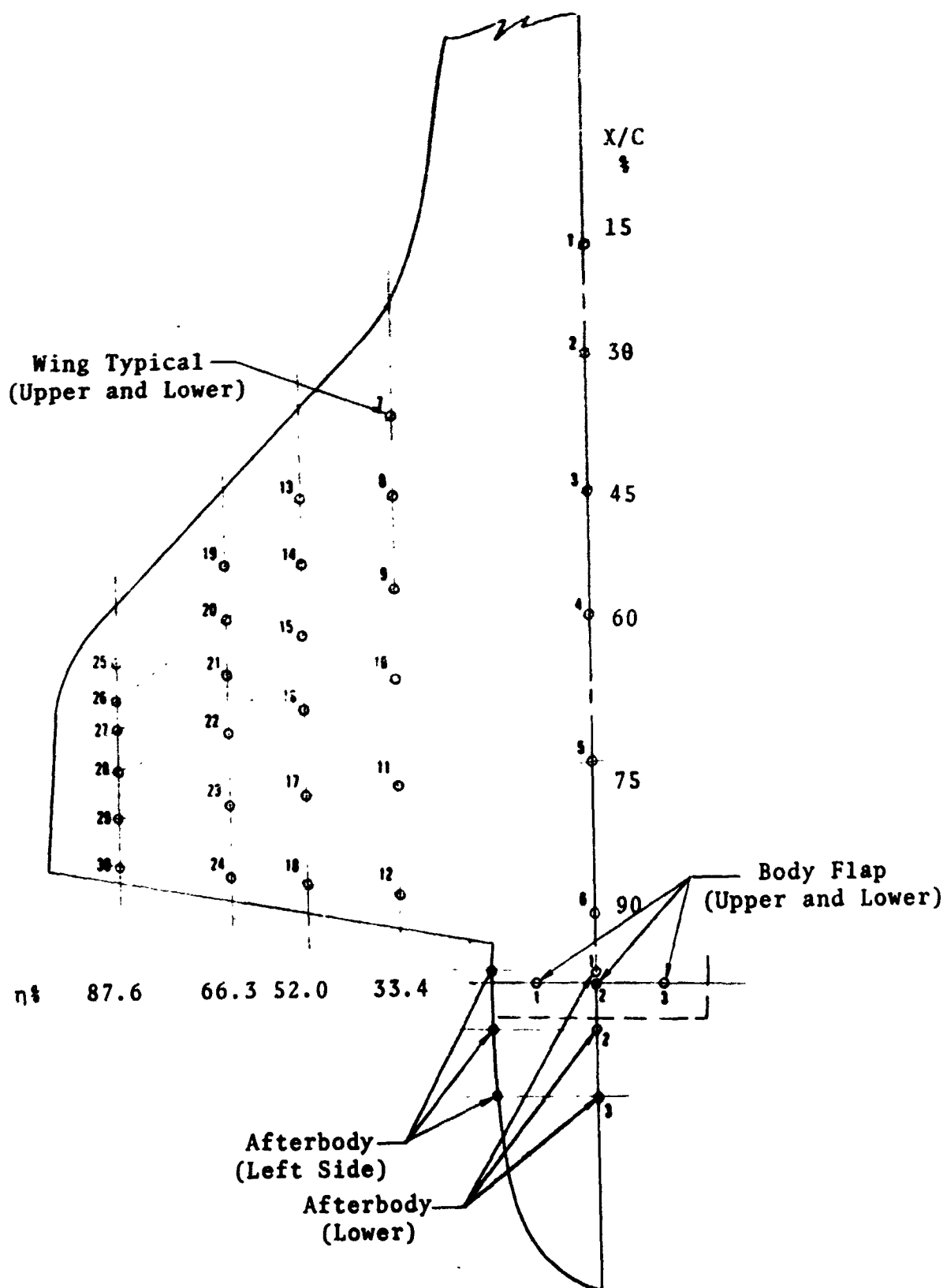
a. J40 and J41 nacelle configuration
Figure 2. - Model sketches.

J42



Nose at M.S. 38.88 (6 PLCS)

b. J₄₂ nacelle configuration.
Figure 2. - Continued.



c. Pressure bug locations.

Figure 2. - Concluded.

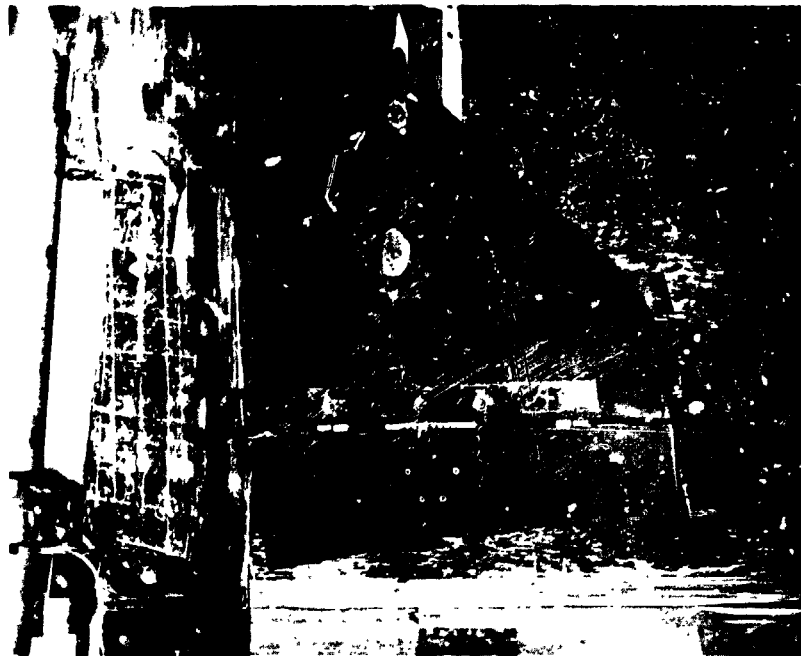


a. Model Installation.

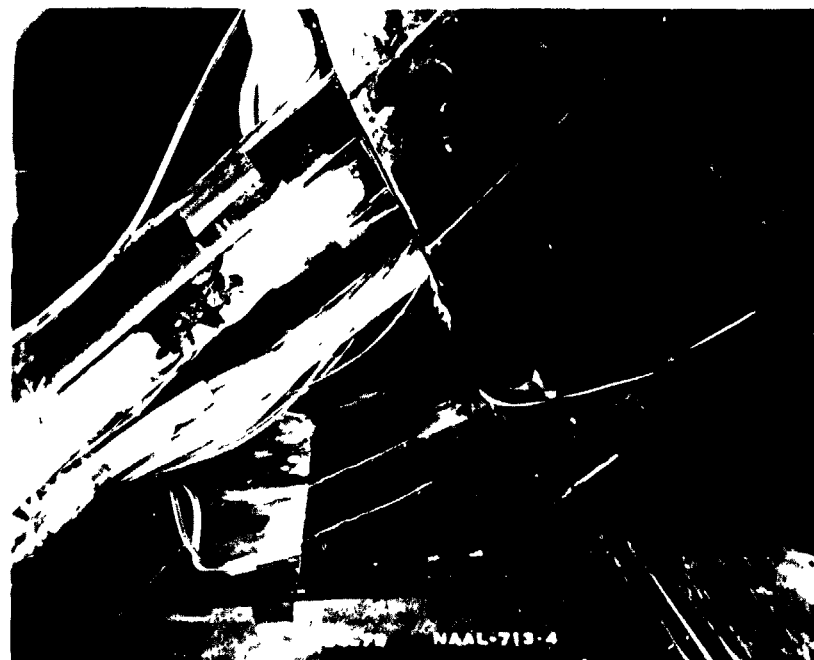


b. Pressure bug installation,
upper surface of left wing.

Figure 3. - Model Photographs.

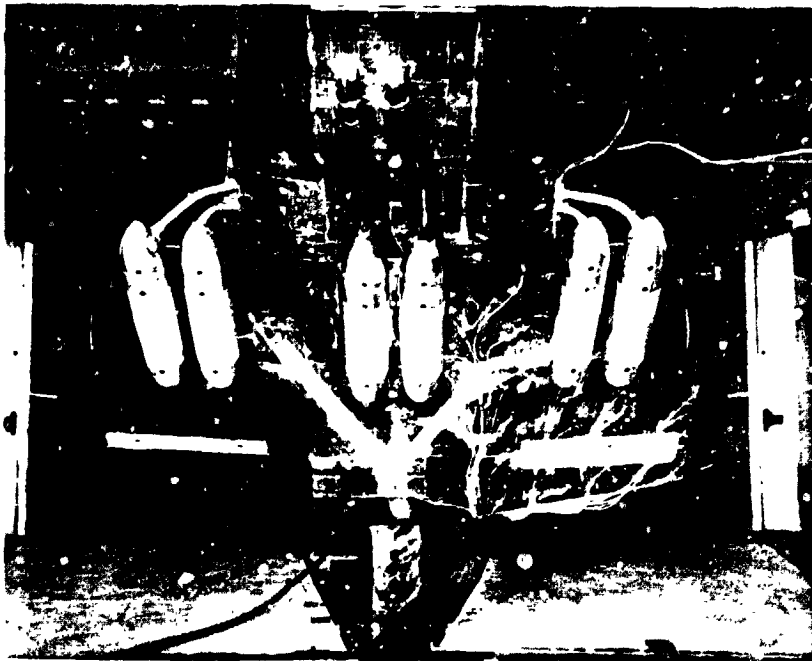


c. Right elevon showing strain gage instrumented beam.

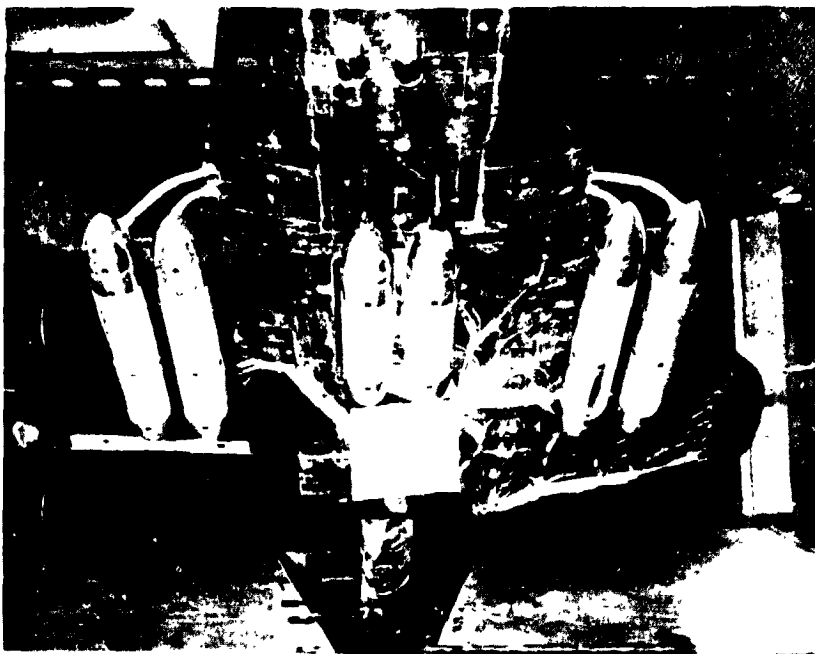


d. Pressure bug location, upper surface of body flap.

Figure 3. - Continued.

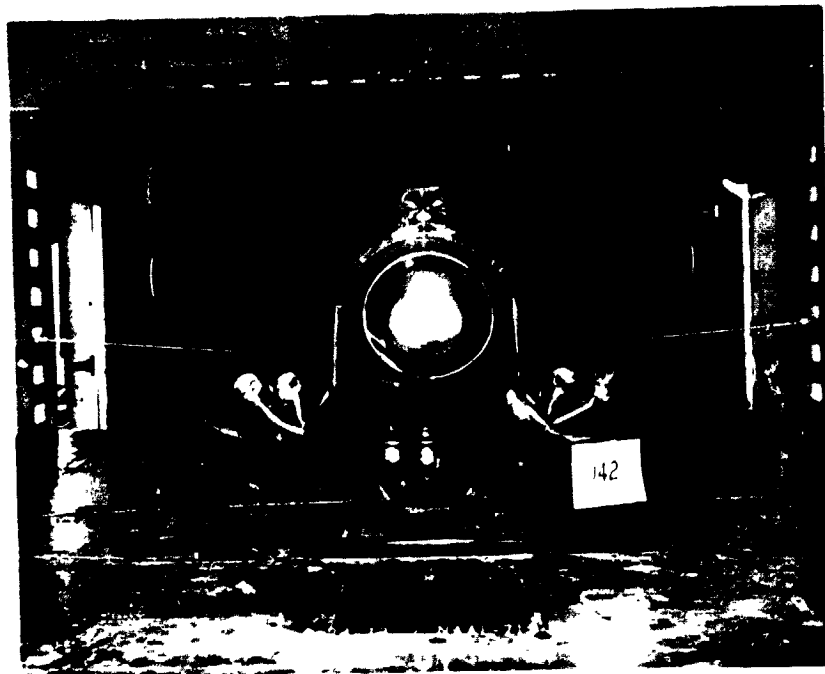


e. J_{40} configuration of ABPS.



f. J_{41} configuration of ABPS.

Figure 3. - Continued.

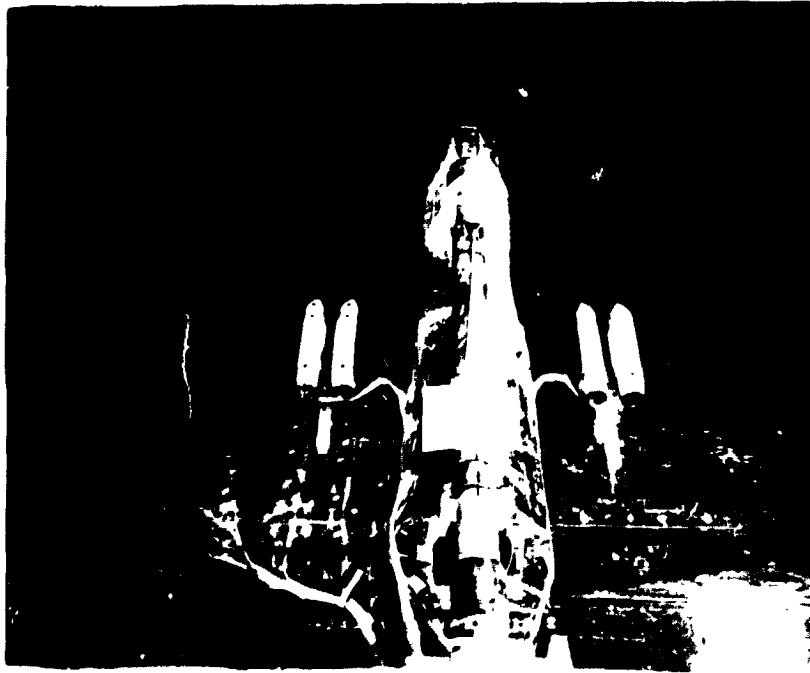


g. J₄₂ configuration of ABPS.



h. J₄₂ left wing.

Figure 3. - Continued.



i. J₄₂ top view.

Figure 3. - Concluded.

DATA FIGURES

| | | | | |
|--------|--------|-------------------|---------------------|-----------------------|
| SYMBOL | ALPHA | PARAMETRIC VALUES | DATA SOURCE | REFERENCE INFORMATION |
| ○ | 10.000 | MACH .200 BETA | ELEVON | SREF 4.4120 SQ.FT. |
| | | PTNUP 1.000 M/B | DATASET ELEVON .000 | LINEF 15.2100 IN. |
| | | BOFLAP -18.000 | GDV042 | SREF 37.9250 IN. |
| | | | GDV003 | YREF 43.5980 IN. |
| | | | | YREF 0.0000 IN. |
| | | | | ZREF -.4050 IN. |
| | | | | SCALE .0405 |

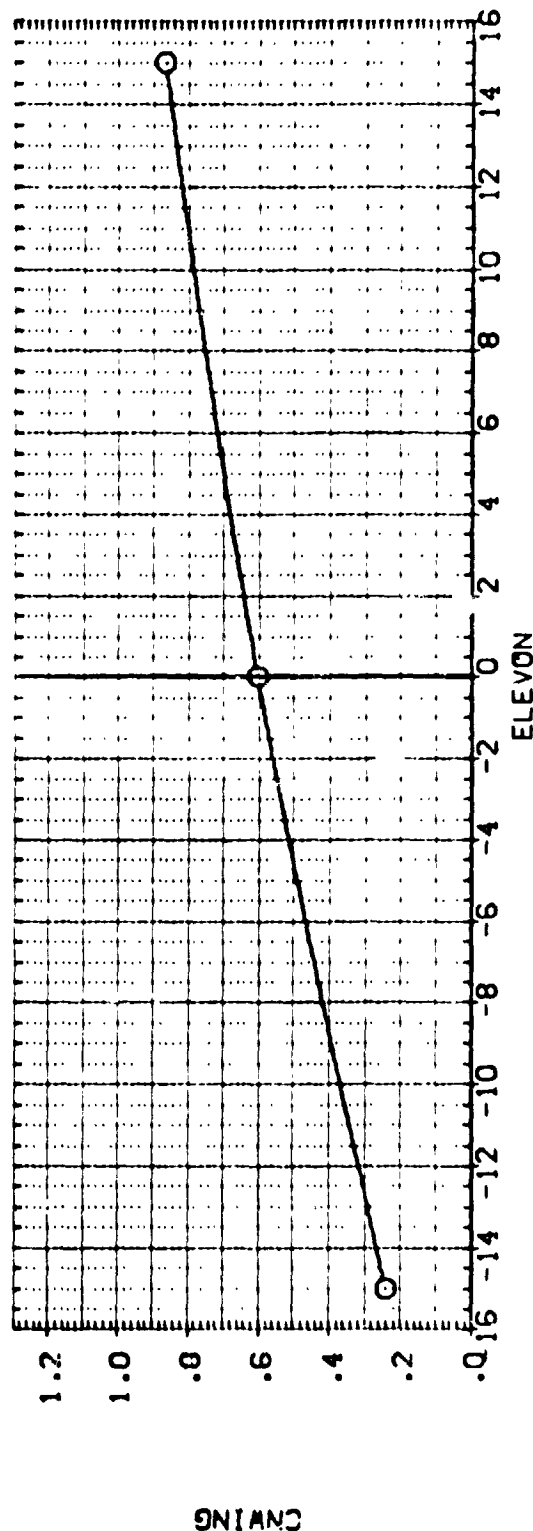
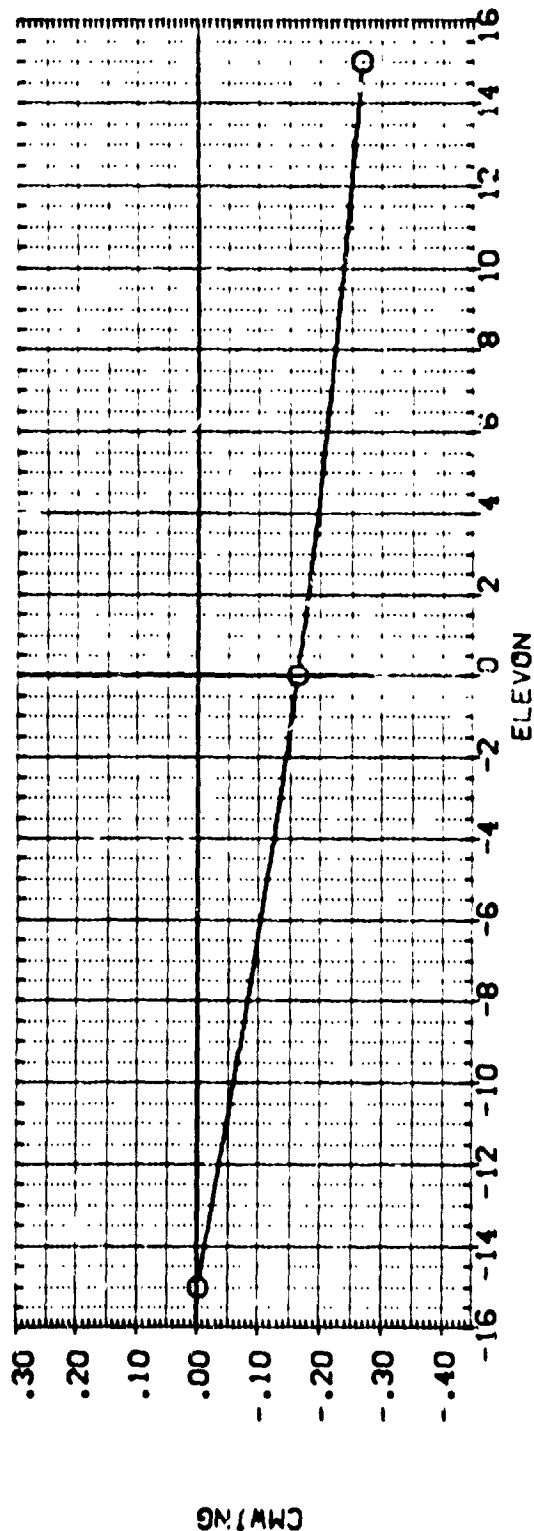


FIG. 4 ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.0

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (GDV045)

| | | | | | | | | |
|--------|--------|--------|-------------------|------|-------------|--------|-----------------------|---------|
| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | | DATA SOURCE | | REFERENCE INFORMATION | |
| O | 10.000 | PTN/P | .200 | BETA | .000 | ELEVON | SREF | 50. FT. |
| | | BOFLAP | 1.000 | M/B | .125 | GOV045 | LRLF | IN. |
| | | | -18.000 | | .000 | GOV030 | BREF | IN. |
| | | | | | | | XTRP | IN. |
| | | | | | | | YTRP | IN. |
| | | | | | | | ZTRP | IN. |
| | | | | | | | SCALE | |

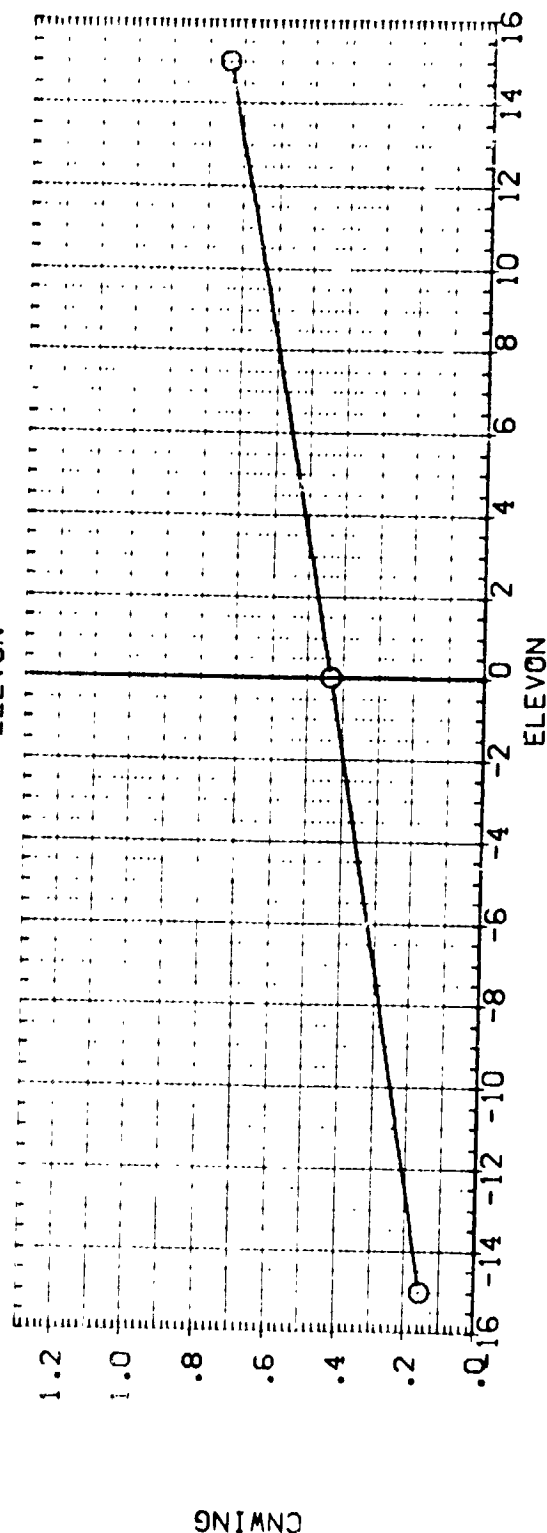
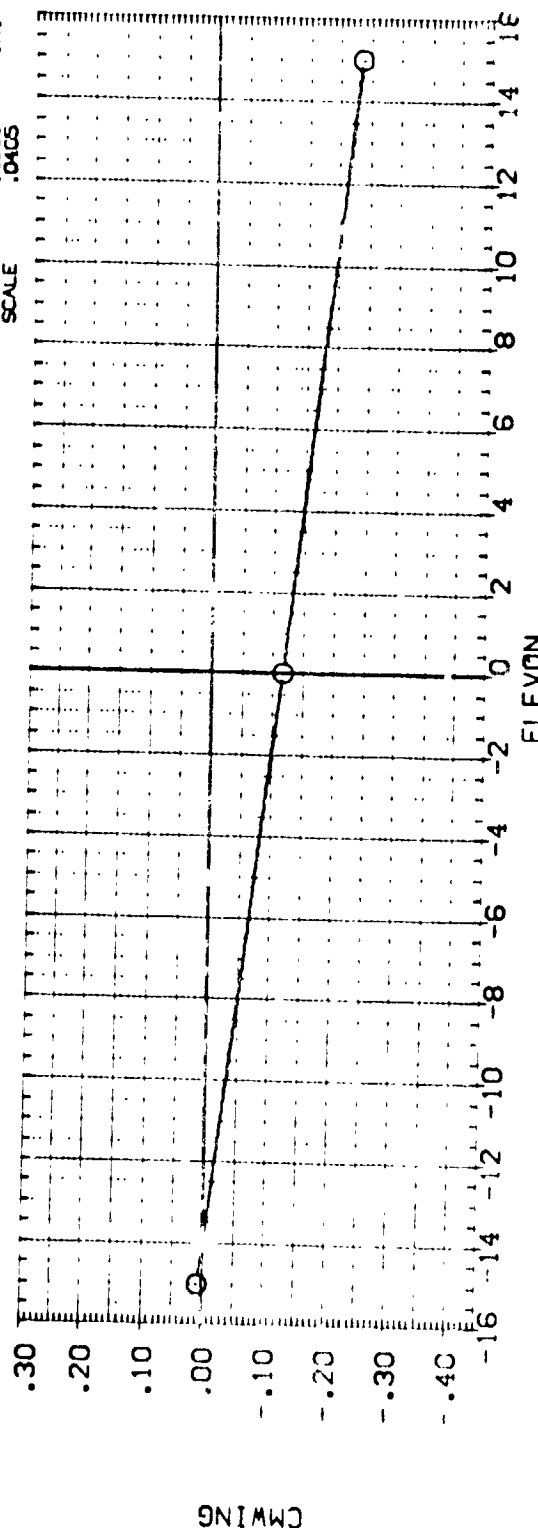


FIG. 4 ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.0

| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | | DATA SOURCE | | ELEVON | | REFERENCE INFORMATION | | SO. FT. |
|--------|--------|------|-------------------|--------|-------------|---------|---------|-------|-----------------------|---------|---------|
| 0 | 10.000 | M/H | .200 | BETA | .000 | DATASET | ELEVON | SREF | | 4.4120 | IN. |
| | | M/H | .286 | BOFLAP | -18.000 | CMC039 | -15.000 | LREF | | 19.2500 | IN. |
| | | | | | | GOV015 | 15.000 | BREF | | 37.9550 | IN. |
| | | | | | | GOV036 | | XREF | | 43.5580 | IN. |
| | | | | | | | | YREF | | .0000 | IN. |
| | | | | | | | | ZREF | | - .4050 | IN. |
| | | | | | | | | SCALE | | .0405 | |

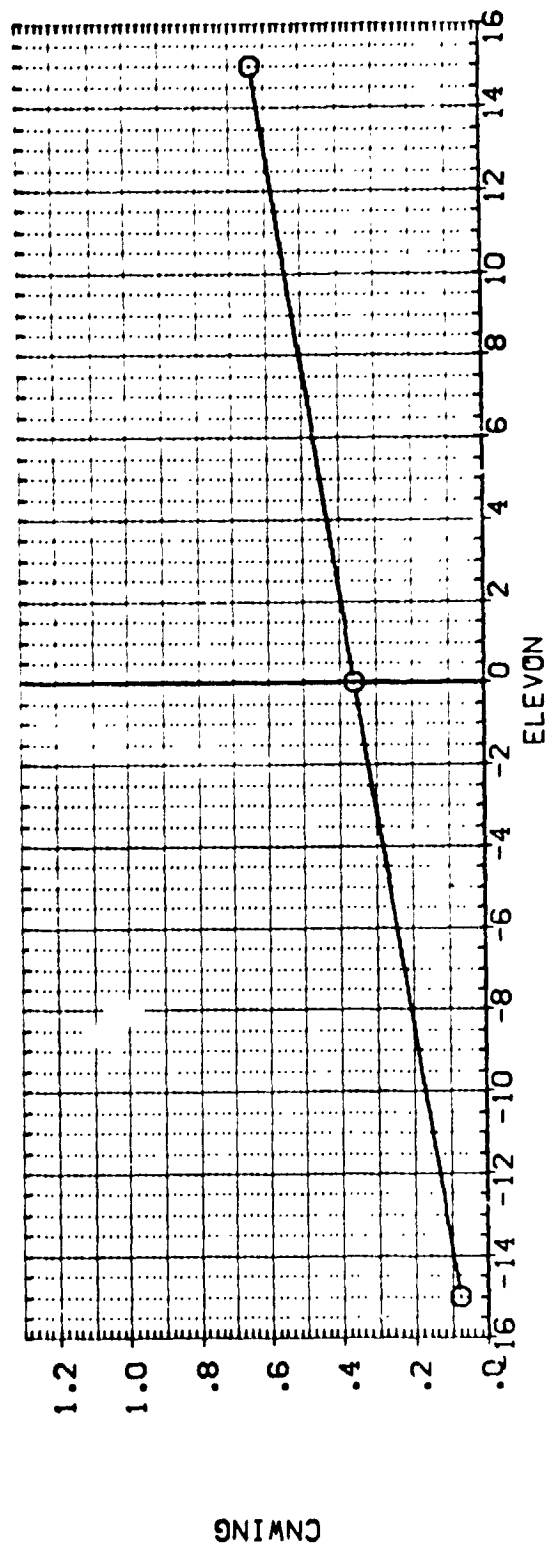
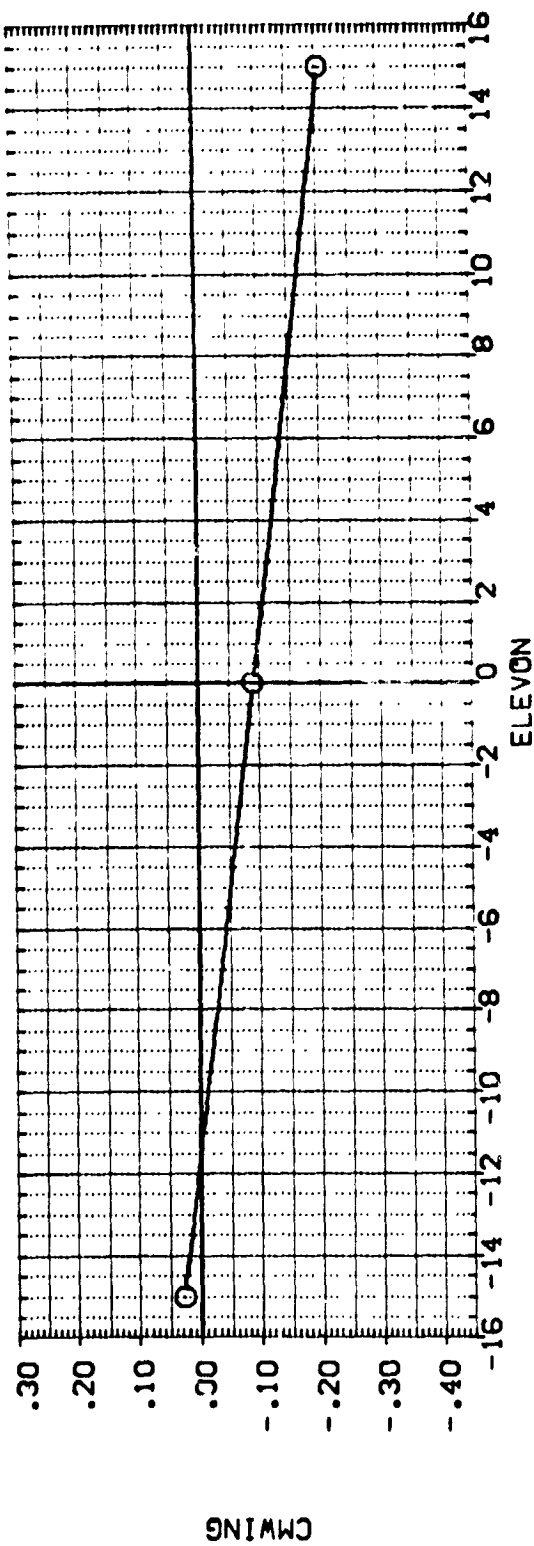


FIG. 4. ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.0

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (GDV041)

| | | | | | | | | |
|--------|--------|--------|-------------------|------|-------------|--------|-----------------------|---------|
| SY 60L | ALPHA | MACH | PARAMETRIC VALUES | | DATA SOURCE | | REFERENCE INFORMATION | |
| O | 10.000 | PTN/P | .200 | BETA | .000 | GDV041 | SREF | 4.4120 |
| | | BOFLAP | 1.300 | H/B | .038 | GDV041 | LREF | 19.2300 |
| | | | -18.000 | | .000 | GDV041 | BREF | 37.9350 |
| | | | | | 15.000 | GDV041 | XREF | 43.5830 |
| | | | | | | GDV041 | YREF | 0.0000 |
| | | | | | | GDV041 | ZREF | -4.0550 |
| | | | | | | GDV041 | SCALE | .0405 |

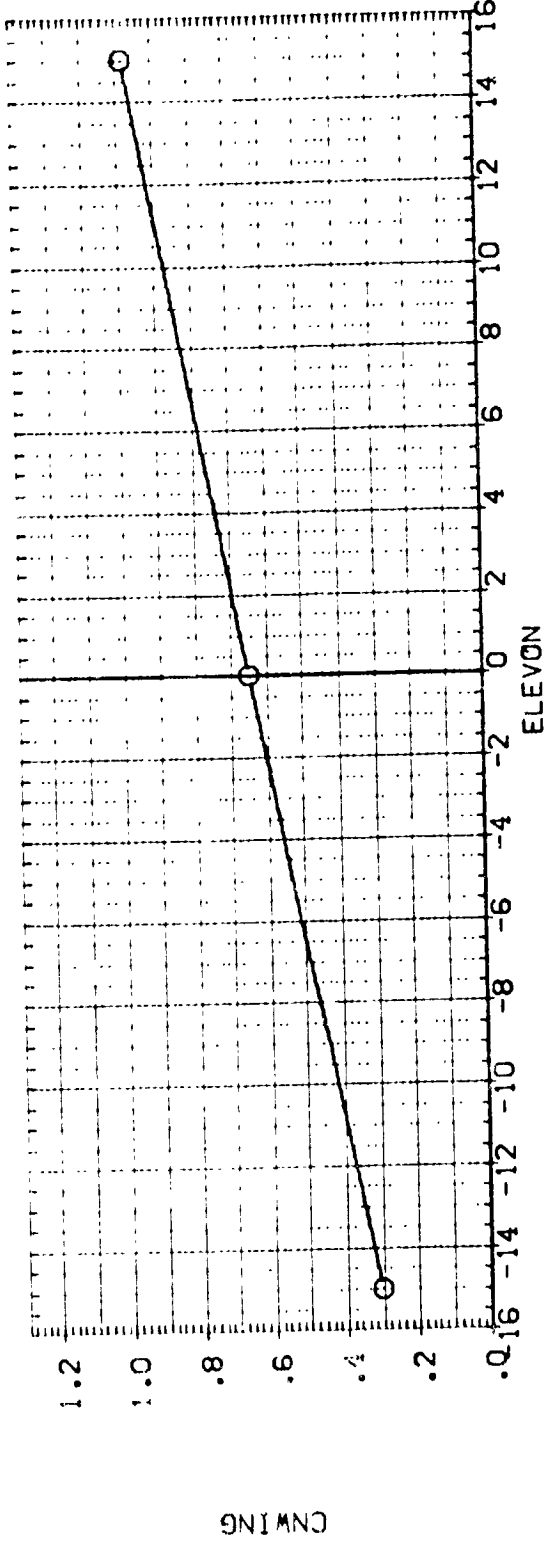
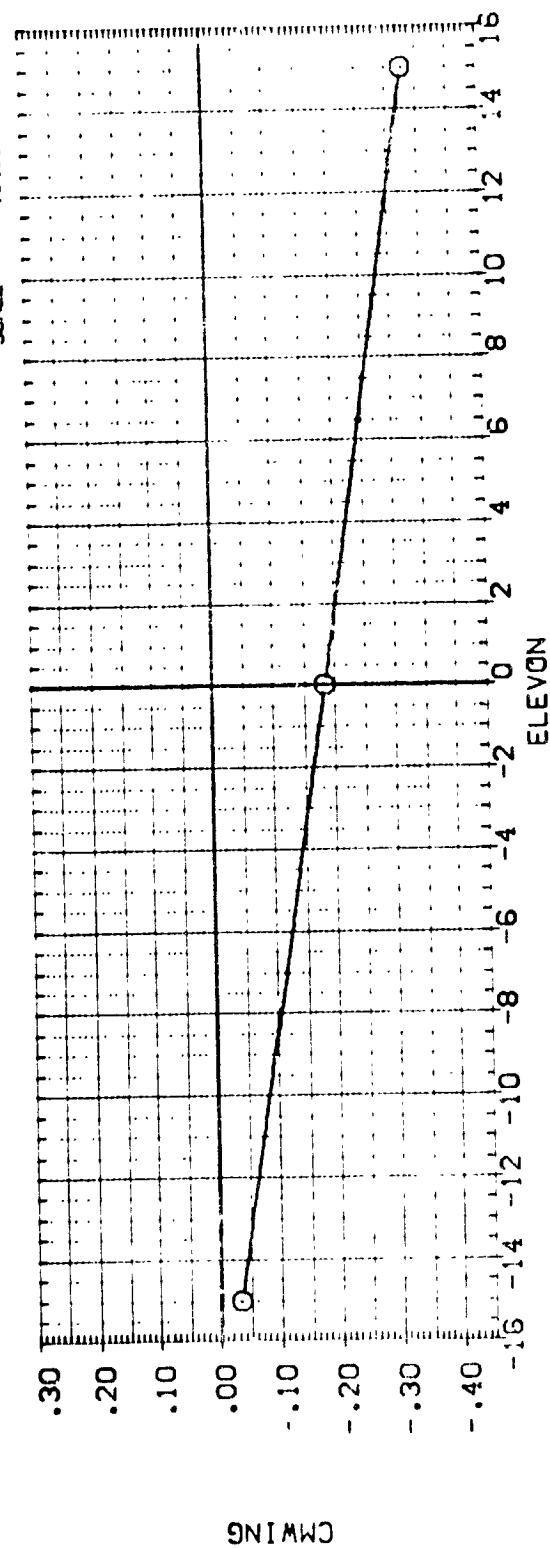


FIG. 5 ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.3

0A578 (NAAL 713) B16 C5 F1 J40 W87 E18 (GDV044)

| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | DATA SOURCE | DATA SET | ELEVON | REF | REFERENCE INFORMATION |
|--------|--------|--------|-------------------|-------------|----------|--------|-------|-----------------------|
| ○ | 10.000 | PTN/P | .200 BETA | ELEVON | GDV007 | .000 | SREF | 4.4120 SO.FT. |
| | | BDFLAP | 1.300 H/B | -15.000 | | | LREF | 19.2300 IN. |
| | | | -18.000 | 15.000 | | | BREF | 37.9350 IN. |
| | | | | | | | XTRP | 43.5980 IN. |
| | | | | | | | YTRP | .0000 IN. |
| | | | | | | | ZTRP | -.4050 IN. |
| | | | | | | | SCALE | .0405 |

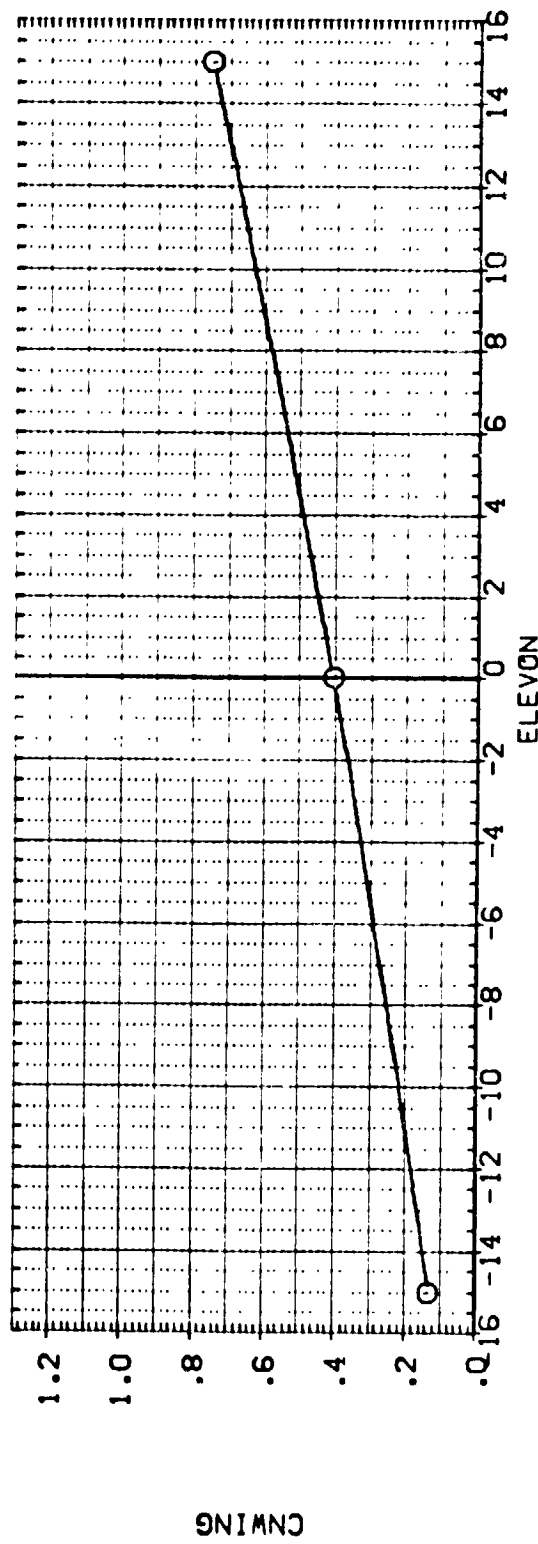
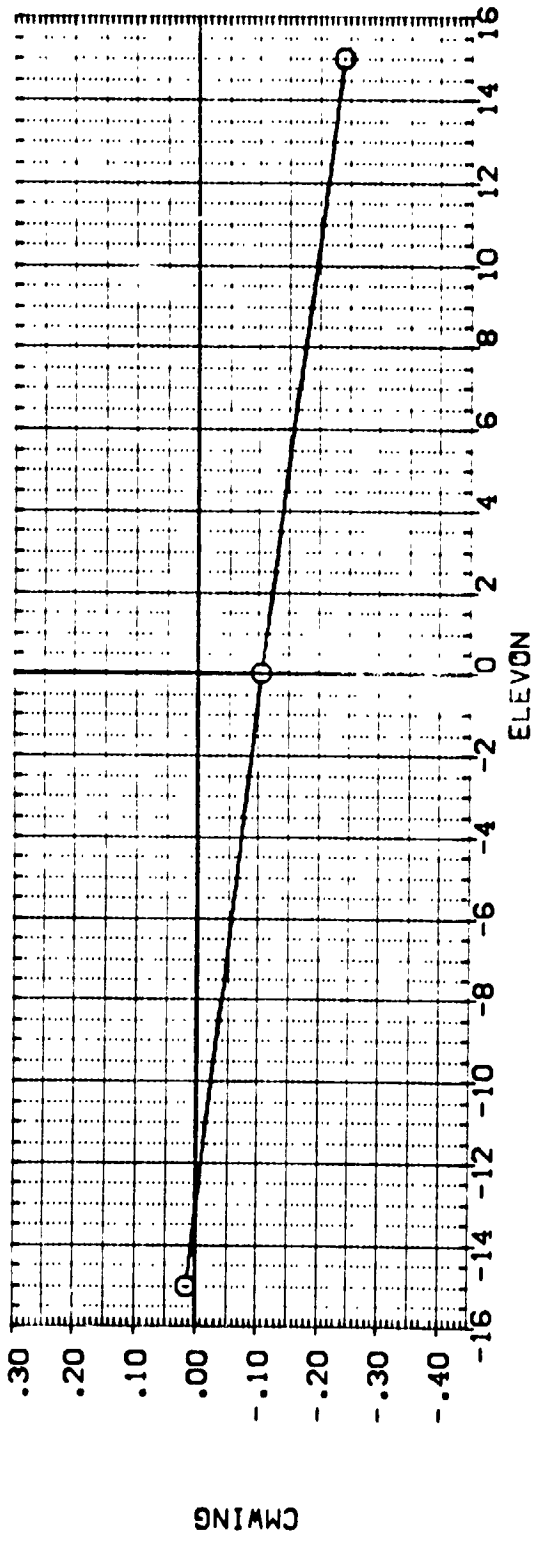


FIG. 5 ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.3

0A578 (NAAL 713) B16 C5 F1 J40 W87 E18 (GDV038)

| | | | | | | | | | | | | | | | |
|--------|--------|-------------------|---------|------|---------|-------------|---------|--------|------|-----------------------|---------|---------|-------|-------|-------|
| SYMBOL | ALPHA | PARAMETRIC VALUES | | | | DATA SOURCE | | | | REFERENCE INFORMATION | | | | | |
| | | MACH | BETA | .000 | DATASET | ELEVON | DATASET | ELEVON | SREF | LREF | BREF | XREF | YREF | ZREF | SCALE |
| ○ | 10.000 | PTN/P | 1.300 | H/B | .286 | GDV038 | -15.000 | GDV017 | .000 | 19.2300 | 37.9350 | 43.5980 | .0000 | .0000 | .0405 |
| | | BOFLAP | -18.000 | | | GDV035 | 15.000 | | | | | | | | |

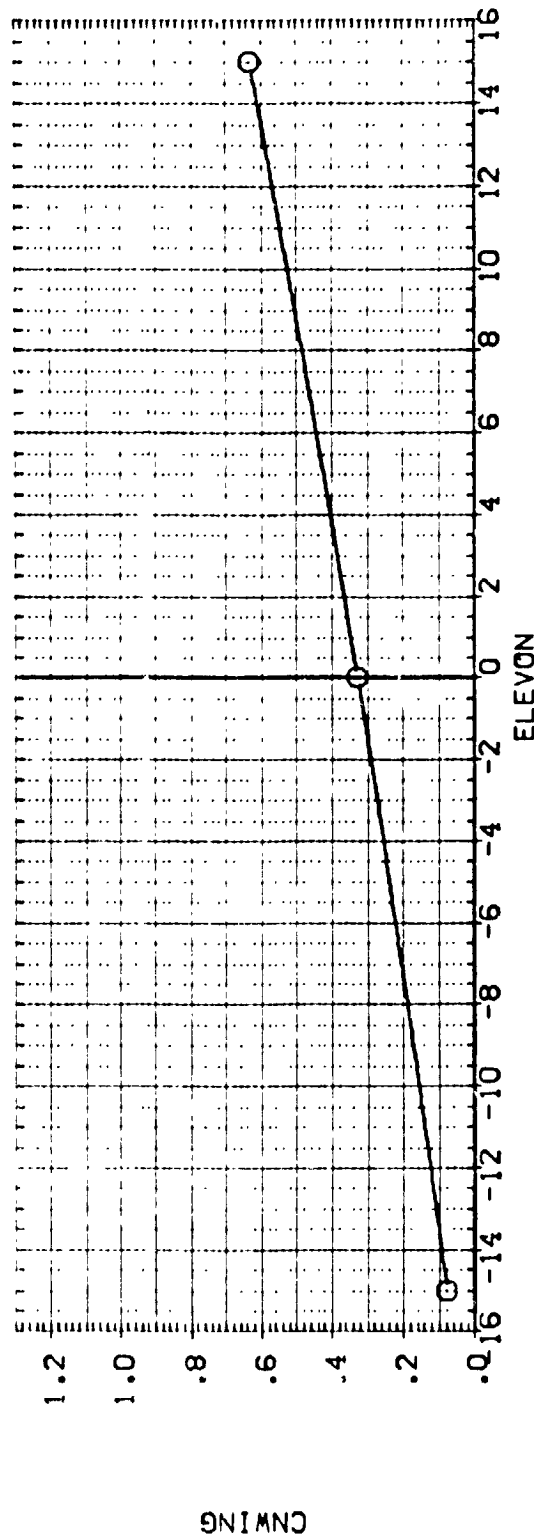
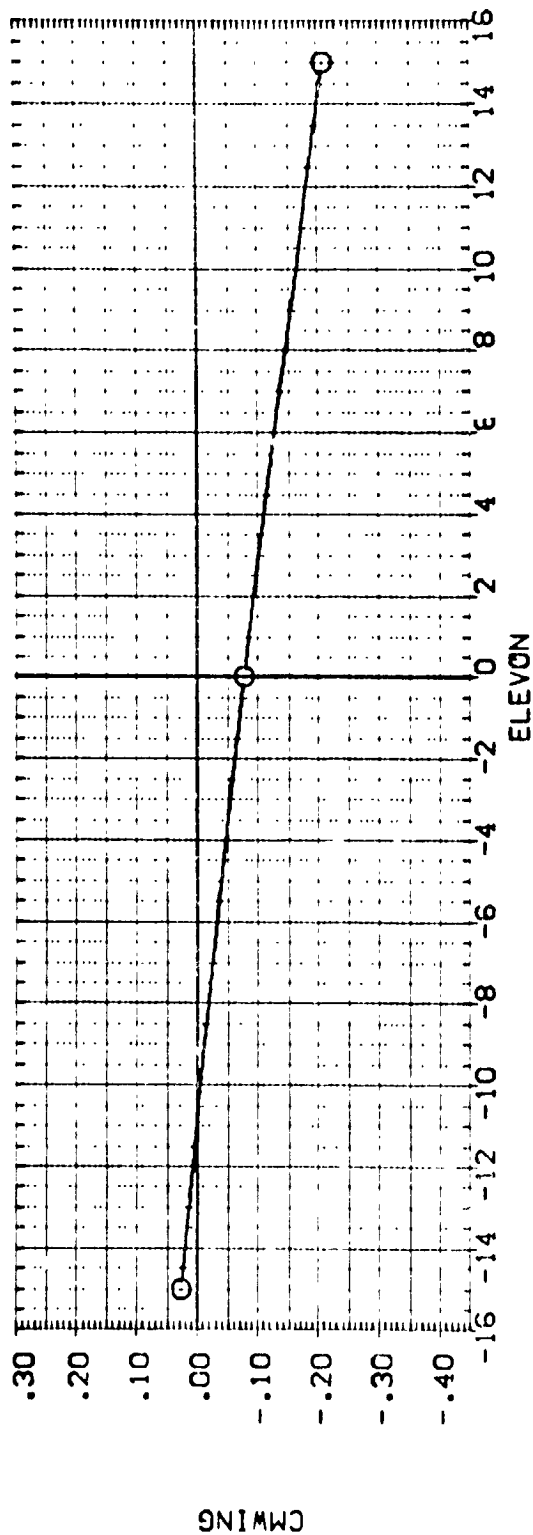


FIG. 5 ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.3

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (GDV040)

| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | DATA SOURCE | DATA SET | ELEVON | REF | 50 FT. |
|--------|--------|------|-------------------|-------------|----------|--------|-------|--------|
| ○ | 10.000 | | BETA | ELEVON | GDV005 | .000 | SREF | IN. |
| | | | M/V | GDV040 | GDV005 | .000 | LREF | IN. |
| | | | | GDV031 | | | BREF | IN. |
| | | | | | | | XREF | IN. |
| | | | | | | | YREF | IN. |
| | | | | | | | ZREF | IN. |
| | | | | | | | SCALE | |

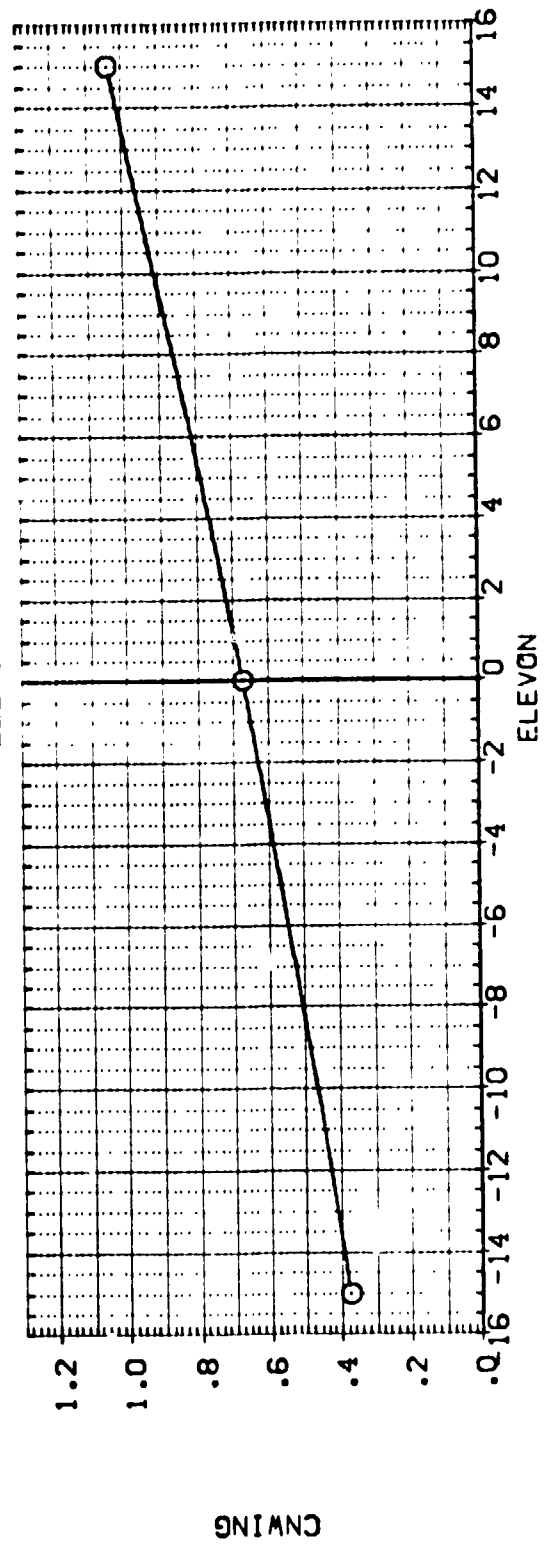
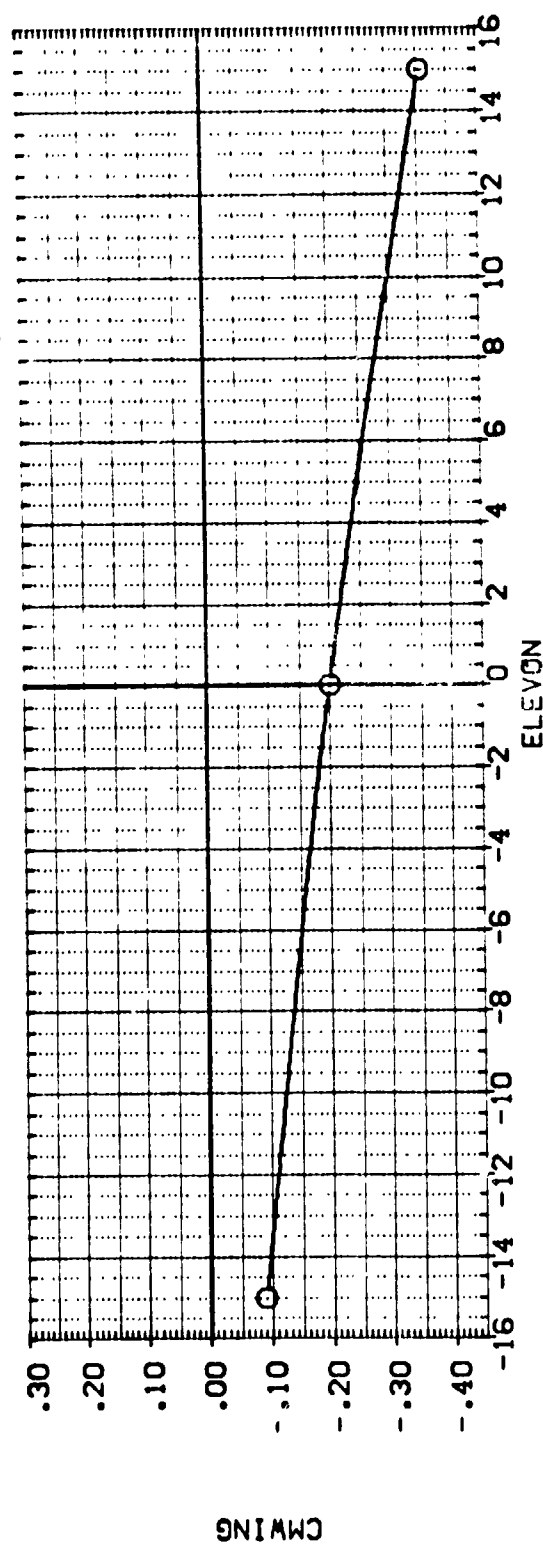


FIG. 6 ELEVON EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.5

| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | DATA SOURCE | REFERENCE INFORMATION |
|--------|--------|--------|-------------------|--|--------------------------------------|
| O | 10.000 | | BETA .200 | ELEVON .000 | SREF 4.4120 SQ.FT. IN. |
| | | PTN/P | H/B 1.500 | DATASET GOV016 ELEVON .000 | LREF 19.7300 IN. BREF 37.6350 IN. |
| | | BDFLAP | -18.000 | DATASET GOV034 XTRP 43.5580 IN. YMRP .0000 IN. ZMRP - .4050 IN. SCALE .0405 | |

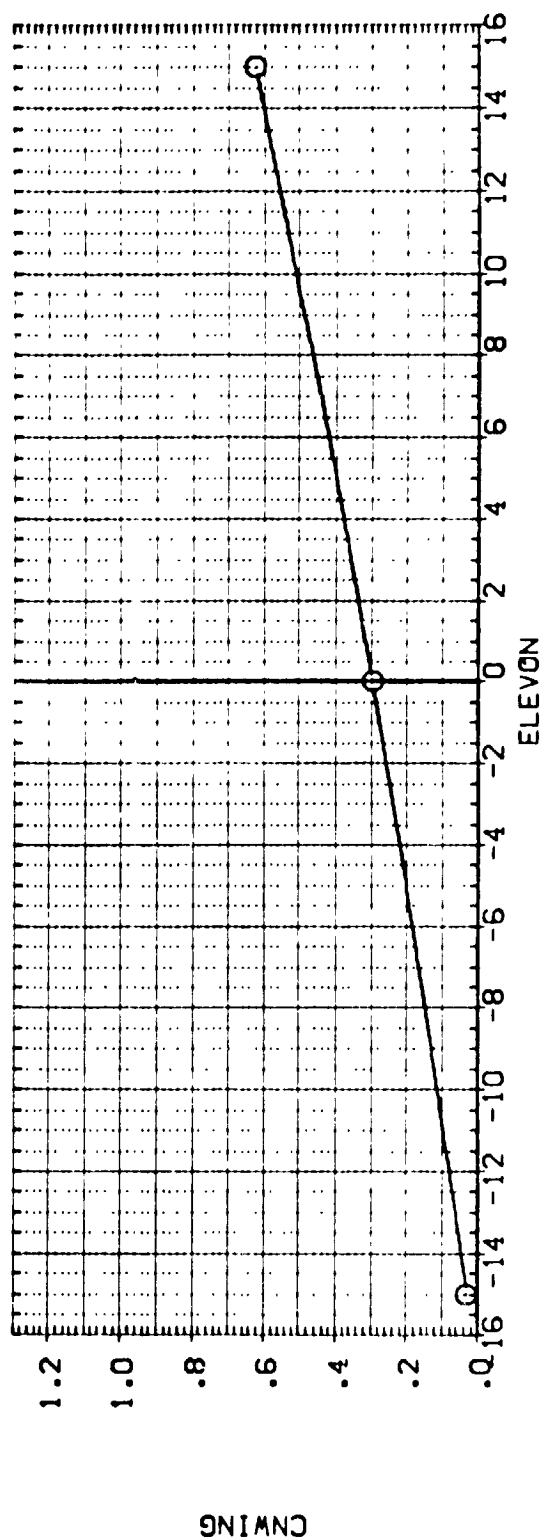
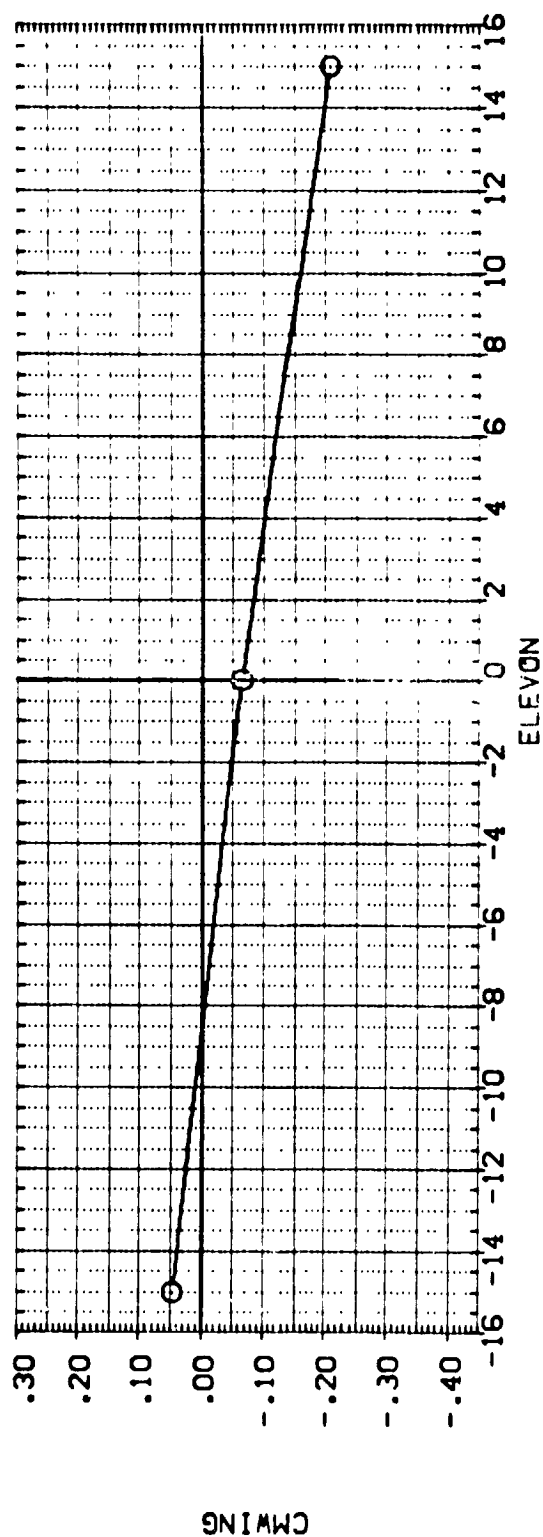


FIG. 6 ELEMENT EFFECTIVENESS WITH J40 AT NOZZLE EXIT PRESSURE RATIO OF 1.5

0A57B (NAAL 713) B16 C5 F1 J41 W87 E18 (GDV056)

| | | | | | | | | |
|--------|--------|--------|-------------------|------|-------------|---------|-----------------------|--------|
| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | | DATA SOURCE | | REFERENCE INFORMATION | |
| ○ | 10.000 | PTN/P | .200 | BETA | .000 | DATASET | SREF | 50.FT. |
| | | BOFLAP | 1.000 | H/B | .000 | GDV056 | LREF | IN. |
| | | | -18.000 | | | | BREF | IN. |
| | | | | | | | XREF | IN. |
| | | | | | | | YREF | IN. |
| | | | | | | | ZREF | IN. |
| | | | | | | | SCALE | .0405 |

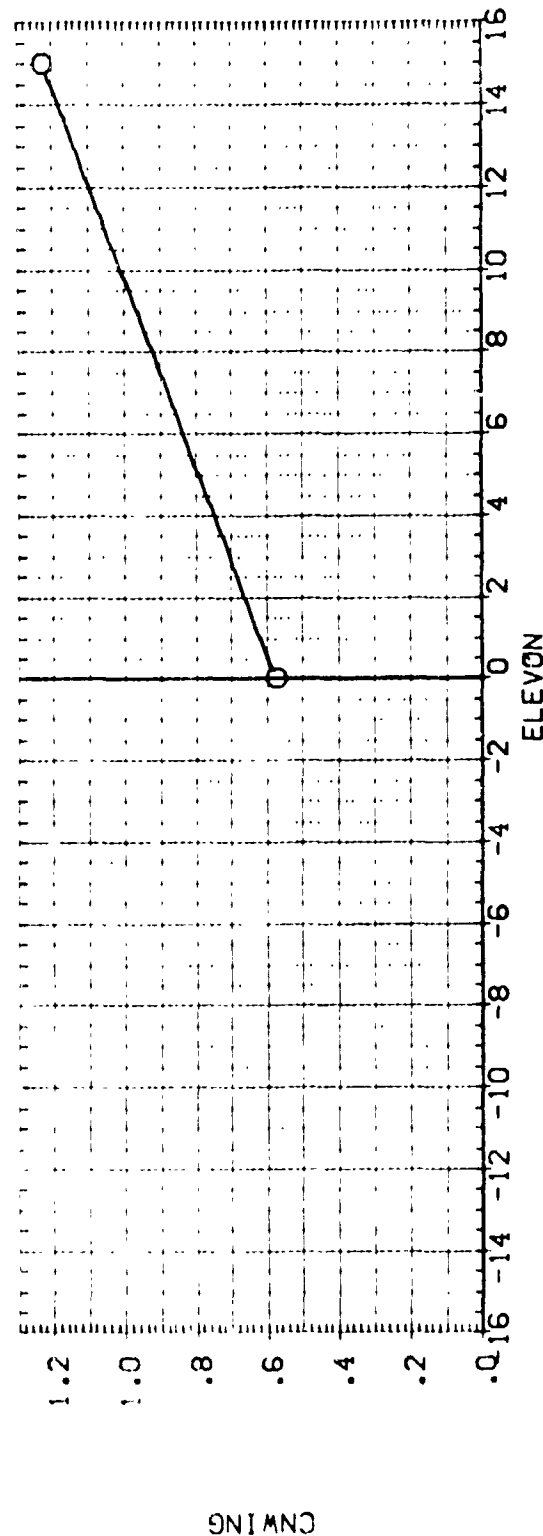
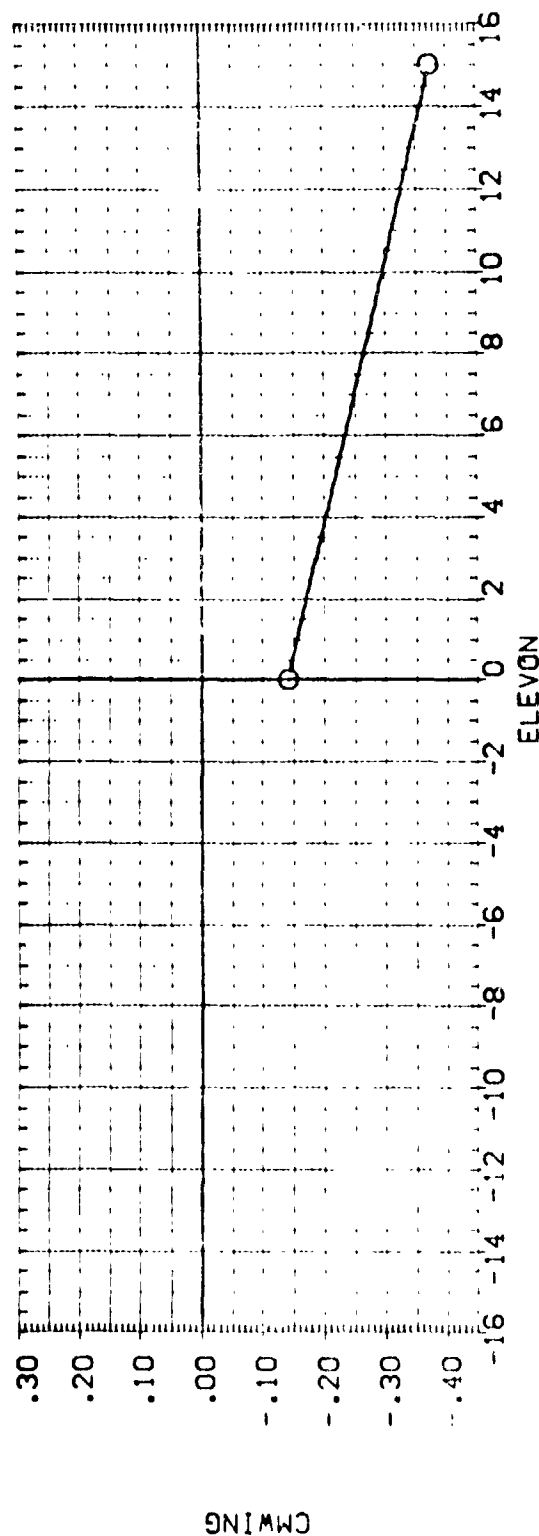


FIG. 7 ELEVON EFFECTIVENESS WITH J41 AT NOZZLE EXIT PRESSURE RATIO OF 1.0

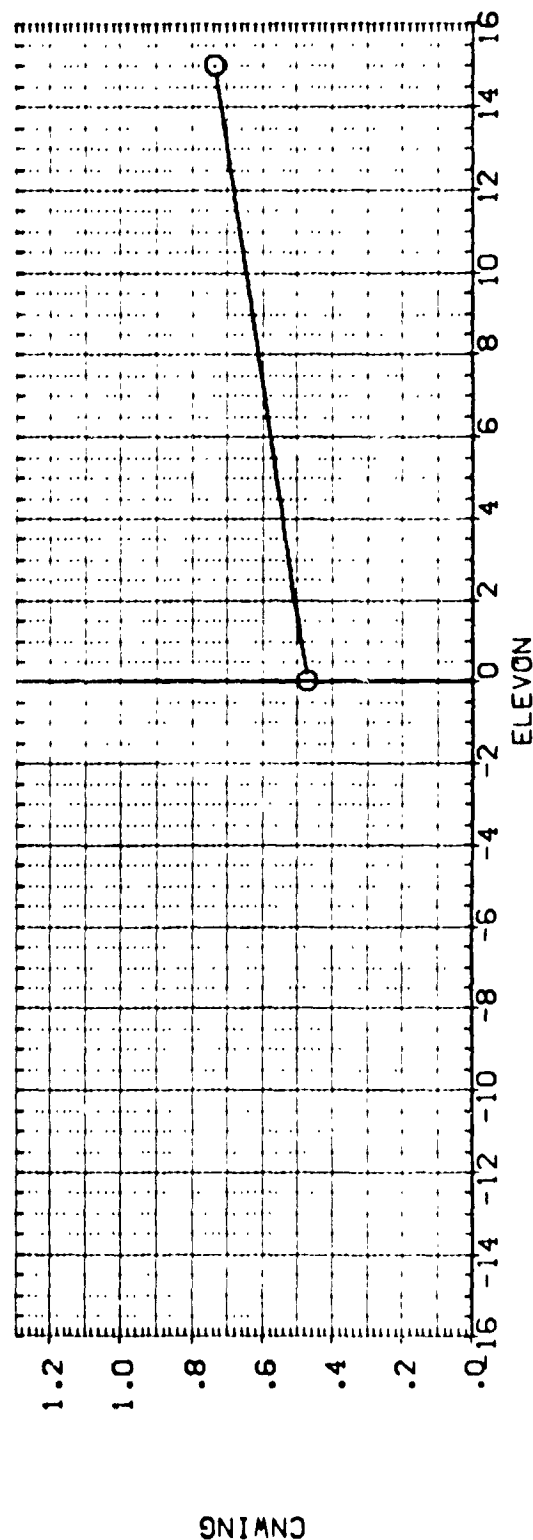
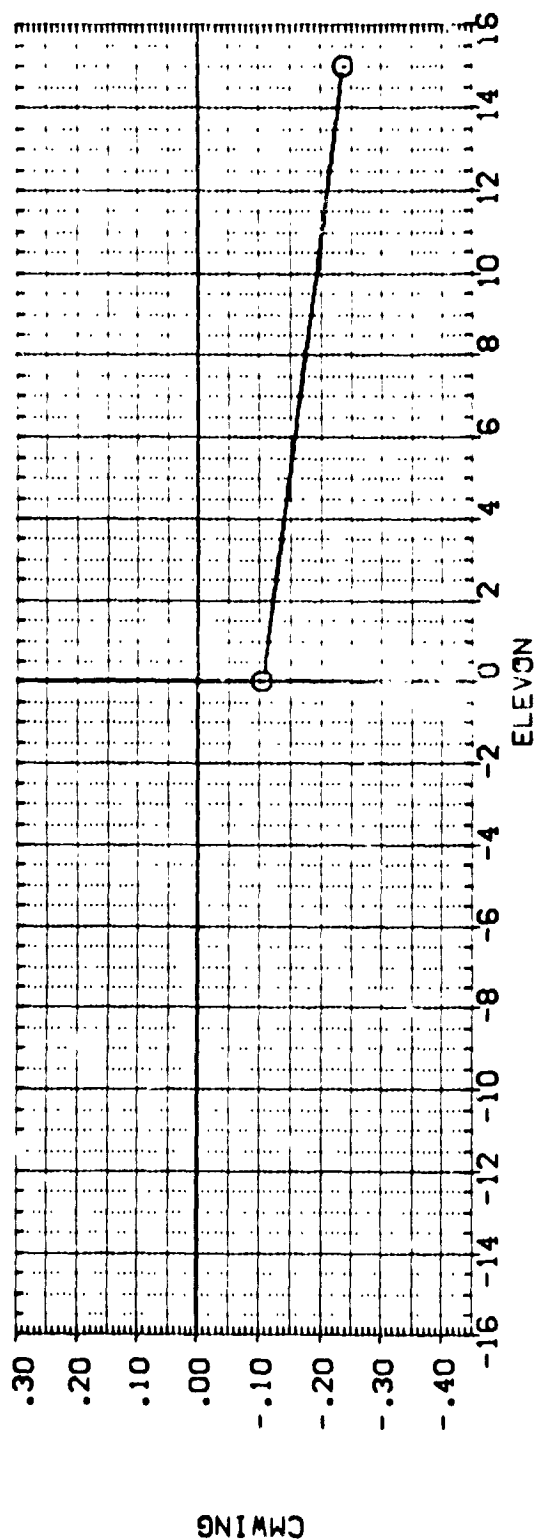
[illegible]

FIG. 7. ELECTRON EFFECTIVENESS WITH J41 AT NOZZLE EXIT PRESSURE RATIO OF 1.0

0A578 (NAAL 713) B16 C5 F1 J41 W87 E18 (GOV053)

| | | | | | |
|--------|--------|---------|-------------------|-------------|-----------------------|
| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | DATA SOURCE | REFERENCE INFORMATION |
| ○ | 10.000 | 1.000 | BETA | SREF | 50. FT. |
| | | 1.000 | W/B | LOEF | IN. |
| | | -18.000 | | BREF | IN. |
| | | | | XREF | IN. |
| | | | | YREF | IN. |
| | | | | ZREF | IN. |
| | | | | SCALE | |

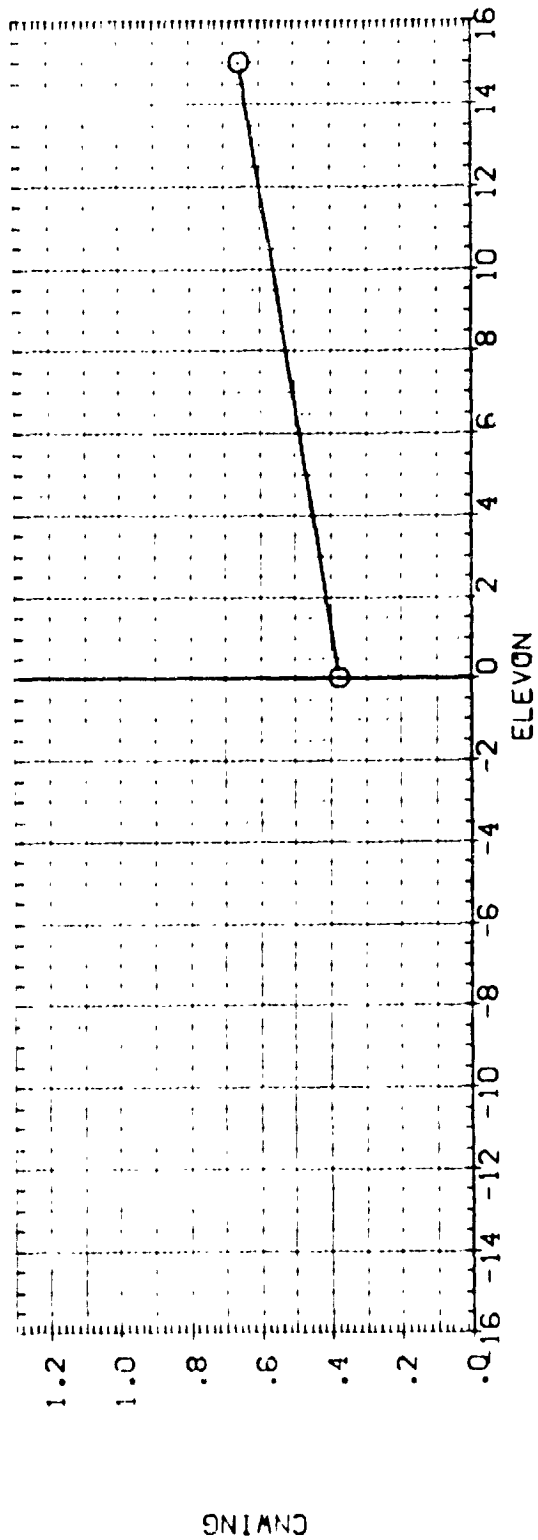
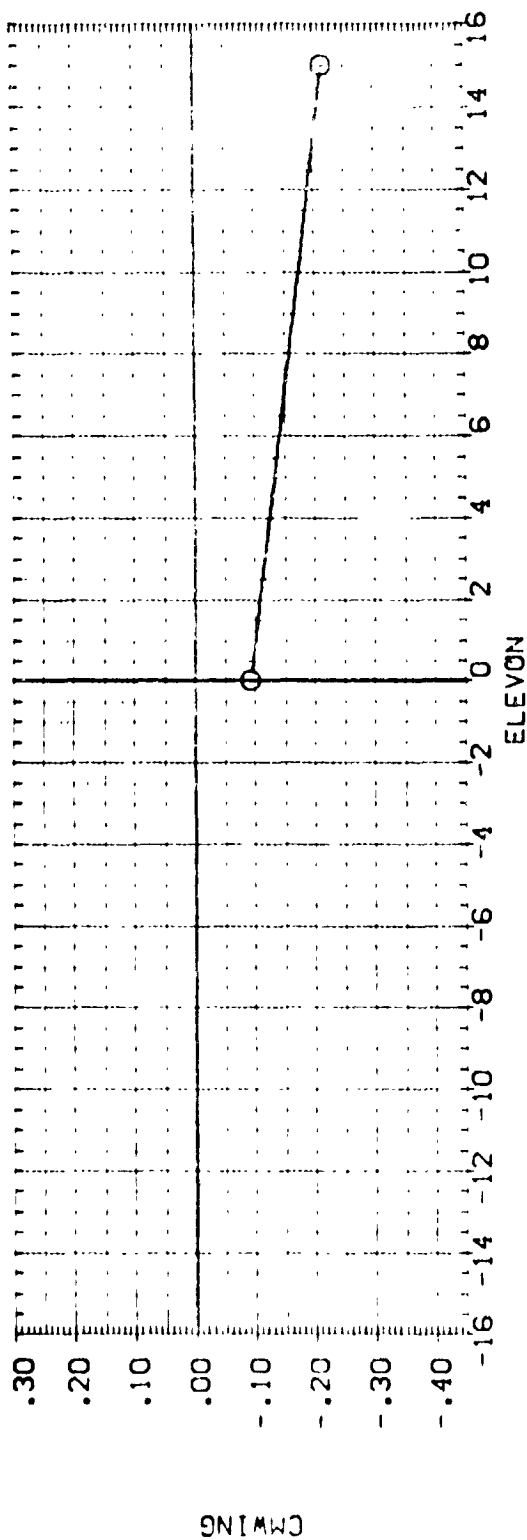


FIG. 7 ELEVON EFFECTIVENESS WITH J41 AT NOZZLE EXIT PRESSURE RATIO OF 1.0

SD. P



0A578 (NAAL 713) B16 C5 F1 J41 W87 E18 (GDV057)

| | | | | | | | | |
|--------|--------|--------|-------------------|------|---------|--------|-------------|-----------------------|
| SYMBOL | ALPHA | MACH | PARAMETRIC VALUES | .000 | DATASET | ELEVON | DATA SOURCE | REFERENCE INFORMATION |
| ○ | 16.000 | PTN/P | .200 BETA | .000 | GDV057 | 15.000 | GDV046 | SREF |
| | | BOFLAP | 1.300 H/B | .125 | | | | LREF |
| | | | -18.000 | | | | | BREF |
| | | | | | | | | XREF |
| | | | | | | | | YREF |
| | | | | | | | | ZREF |
| | | | | | | | | SCALE |
| | | | | | | | | 4.4120 SQ.FT. |
| | | | | | | | | 19.2300 IN. |
| | | | | | | | | 37.9350 IN. |
| | | | | | | | | 43.5980 IN. |
| | | | | | | | | .0000 IN. |
| | | | | | | | | .0000 IN. |
| | | | | | | | | .0050 IN. |
| | | | | | | | | .0405 |

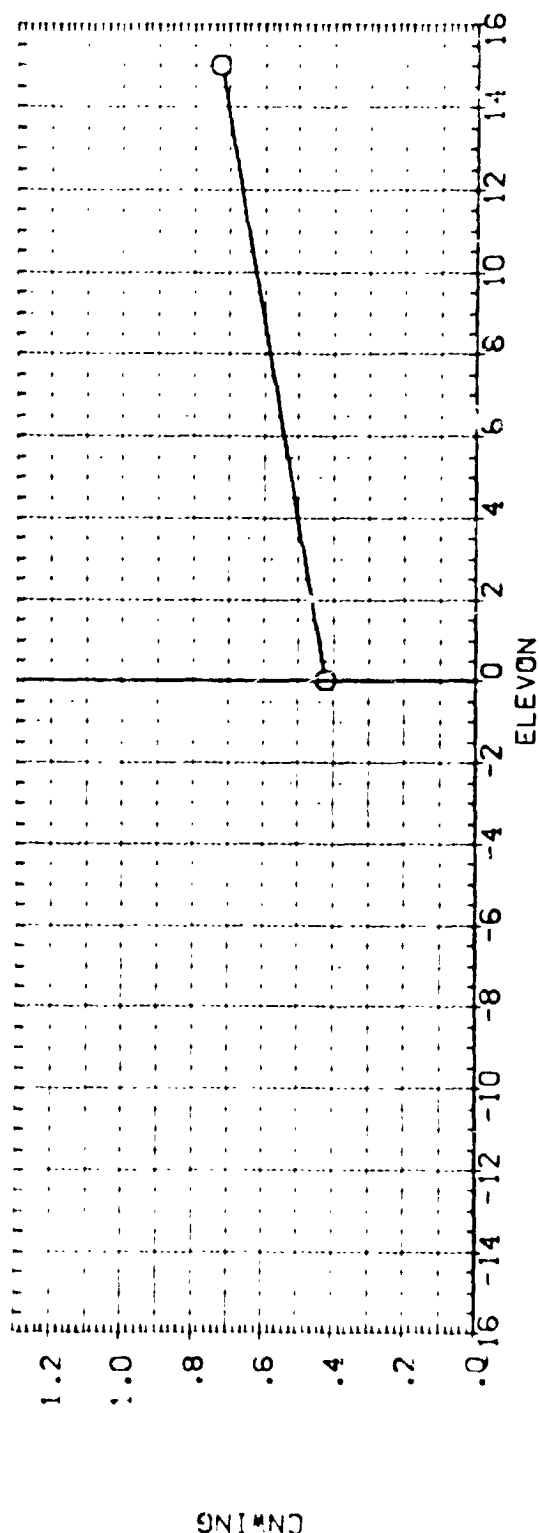
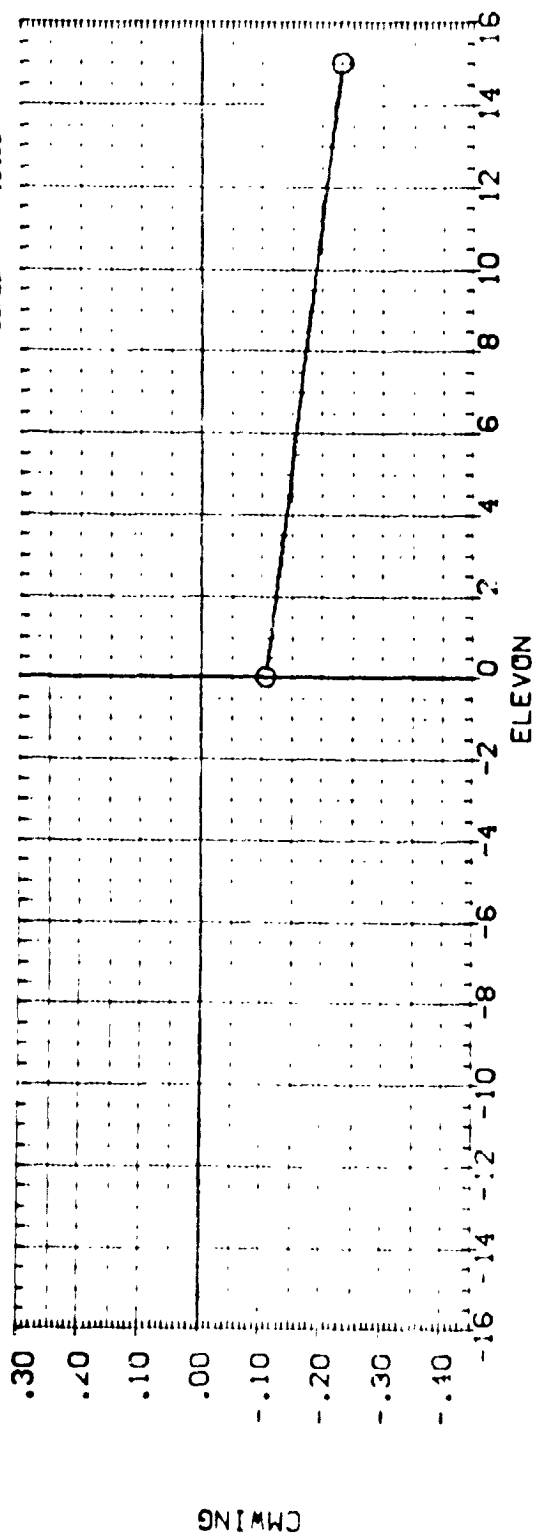


FIG. 8 ELEVON EFFECTIVENESS WITH J41 AT NOZZLE EXIT PRESSURE RATIO OF 1.3

0A573 (NAAL 713) B16 C5 F1 J41 W87 E18 (GDV052)

| | | | | | | | |
|--------|--------|-------------------|---------|-------------|-------|-----------------------|--|
| SYMBOL | ALPHA | PARAMETRIC VALUES | | DATA SOURCE | | REFERENCE INFORMATION | |
| O | 10.000 | MACH | BETA | ELEVON | SREF | SQ.FT. | |
| | | PTNUP | H/B | .000 | LRFF | IN. | |
| | | BOFLAP | -18.000 | .266 GDV052 | BRFF | IN. | |
| | | | | | YMRP | IN. | |
| | | | | | ZMRP | IN. | |
| | | | | | SCALE | | |
| | | | | | | | |

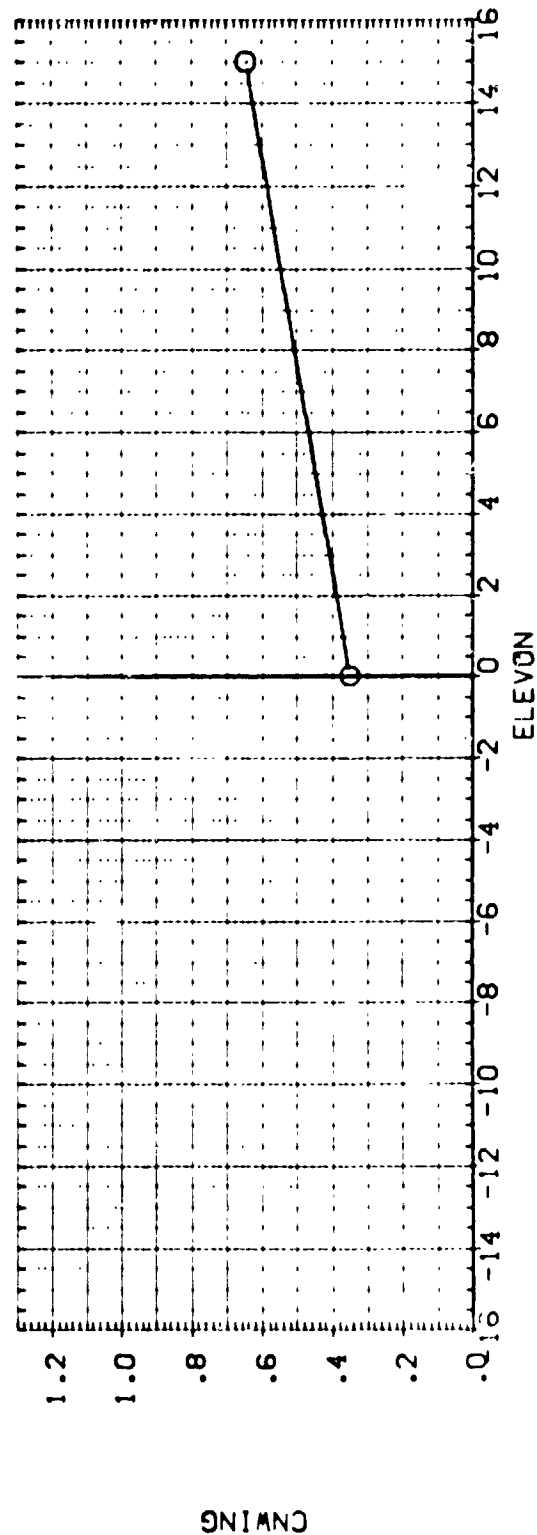
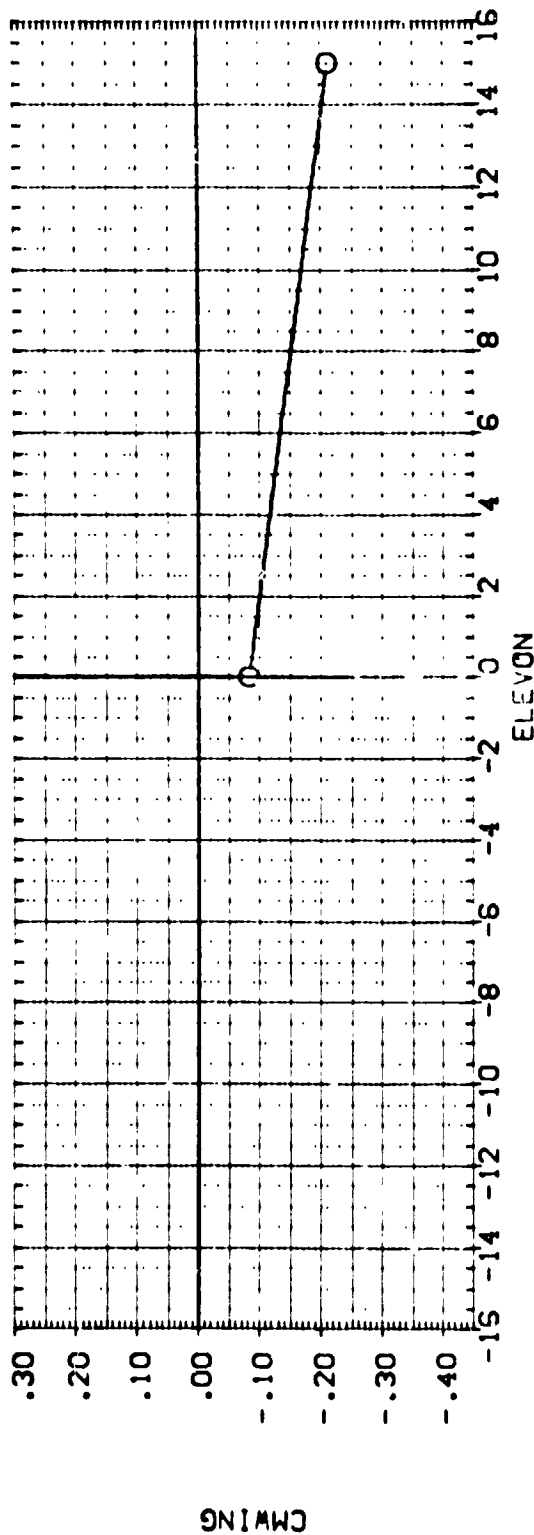


FIG. 8 EL: ON EFFECTIVENESS WITH J41 AT NOZZLE EXIT PRESSURE RATIO OF 1.3

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | H/V | | PTN/P | | BDF/LAP | | REFERENCE INFORMATION | |
|-----------------|---|---------------------------|-----------|--------|---------|---------|------|-------|---------|---------|----------|-----------------------|--|
| (RDVA42) | Q | QAS7B (NAL 713) | B16 CS F1 | J40 | V87 E18 | -15.000 | .038 | 1.000 | -18.000 | SREF | 4.1120 | 50. FT. | |
| (RDVA45) | Q | QAS7B (NAL 713) | B16 CS F1 | J40 | V87 E18 | -15.000 | .125 | 1.000 | -18.000 | LREF | 19.2220 | N. | |
| (RDVA38) | Q | QAS7B (NAL 713) | B16 CS F1 | J40 | V87 E18 | -15.000 | .286 | 1.000 | -18.000 | BREF | 37.9330 | N. | |
| | | | | | | | | | | XMRP | 43.5830 | N. | |
| | | | | | | | | | | YMRP | 00.0000 | N. | |
| | | | | | | | | | | ZMRP | -40.0000 | N. | |
| | | | | | | | | | | SCALE | .0405 | | |

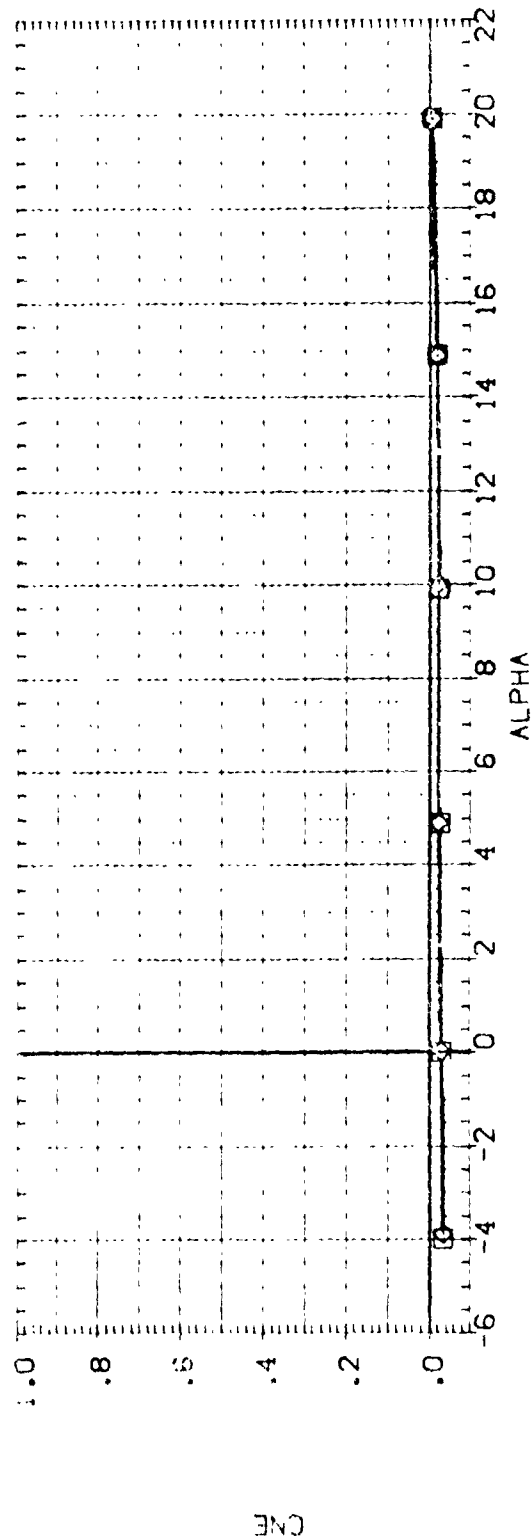
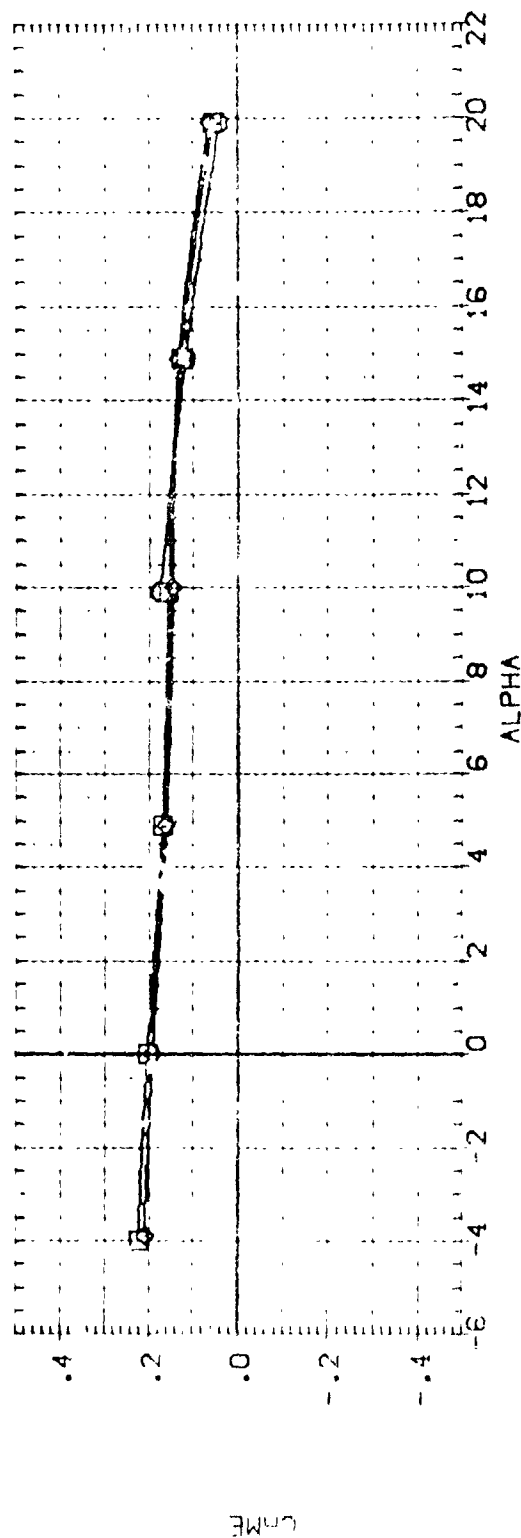


FIG. 9 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.0
 (A)MACH = .16

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | MACH | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (RDVA03) | QAS7B (NAAL 713) 816 CS FI J40 V87 E18 | .000 | .038 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (RDVA06) | QAS7B (NAAL 713) 816 CS FI J40 V87 E18 | .000 | .125 | 1.000 | -18.000 | LREF 19.2300 IN. |
| (RDVA15) | QAS7B (NAAL 713) 816 CS FI J40 V87 E18 | .000 | .286 | 1.000 | -18.000 | BREF 37.5750 IN. |
| | | | | | | XTRP 43.5330 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

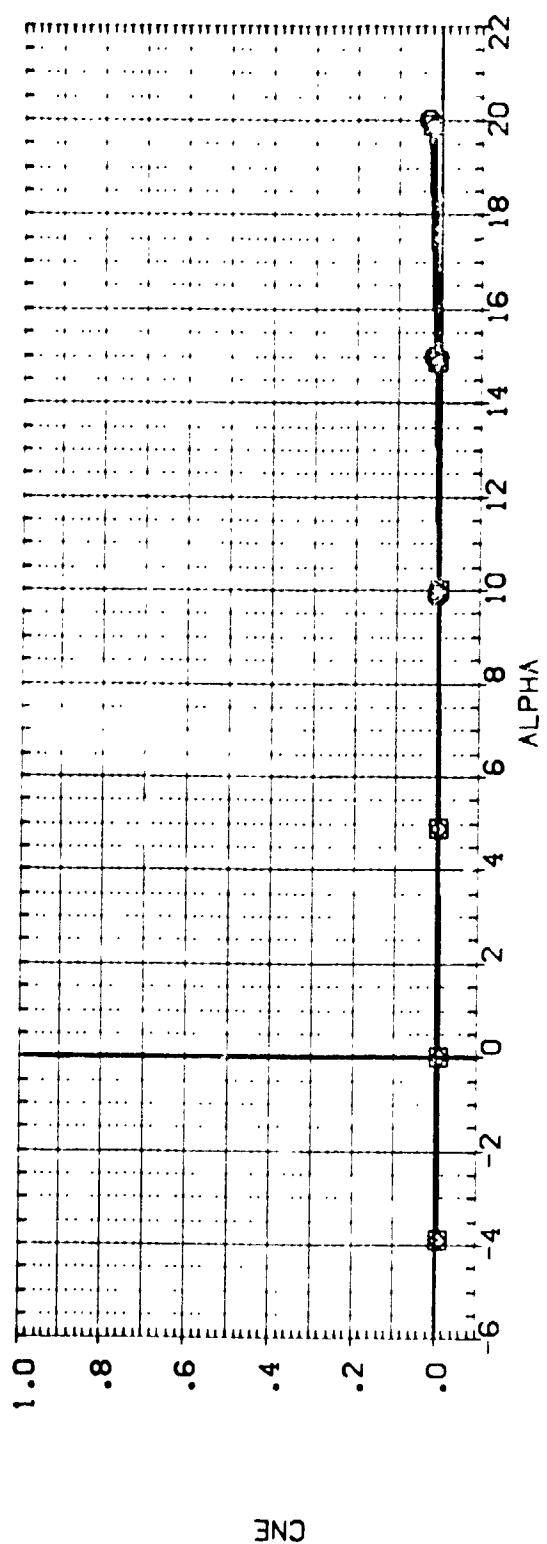
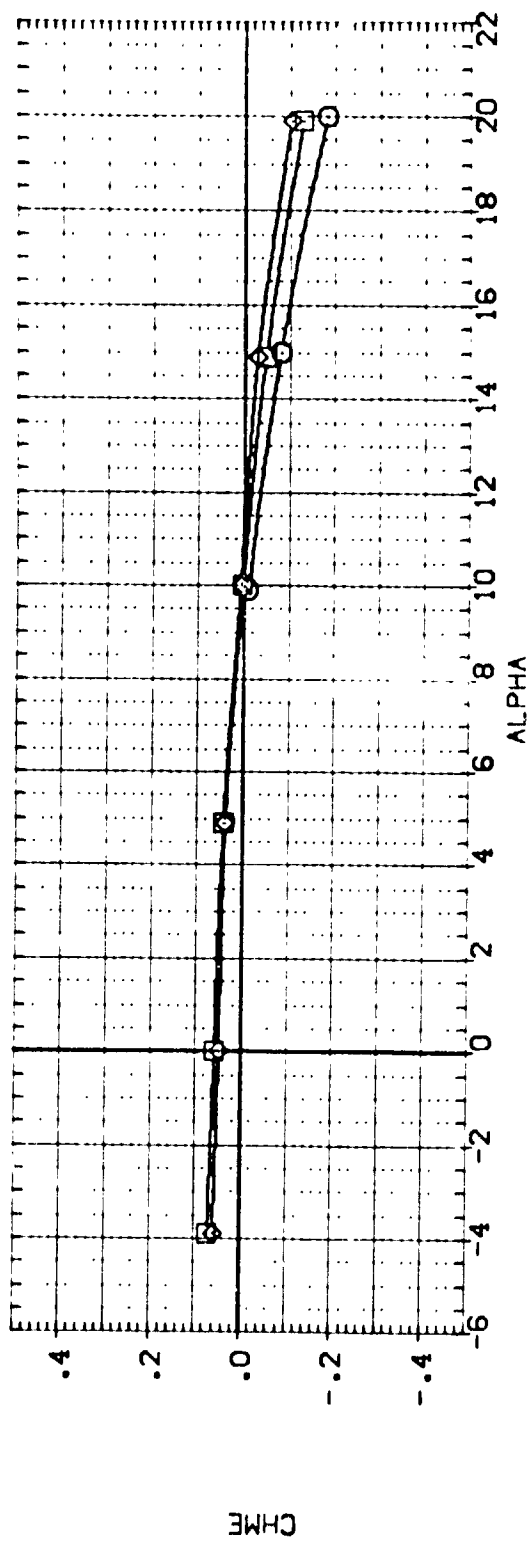


FIG. 9 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.0
 (A)MACH = .16 PAGE 17

| | | | | | | |
|-----------------|---------------------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (RDVA33) | 0A578 (NAL 713) B16 CS F1 J40 V87 E18 | 15.000 | .039 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (RDVA30) | 0A578 (NAL 713) B16 CS F1 J40 V87 E18 | 15.000 | .125 | 1.000 | -18.000 | LREF 19.2300 IN. |
| (RDVA36) | 0A578 (NAL 713) B16 CS F1 J40 V87 E18 | 15.000 | .286 | 1.000 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XREF 43.5950 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -4.050 IN. |
| | | | | | | SCALE .0105 |

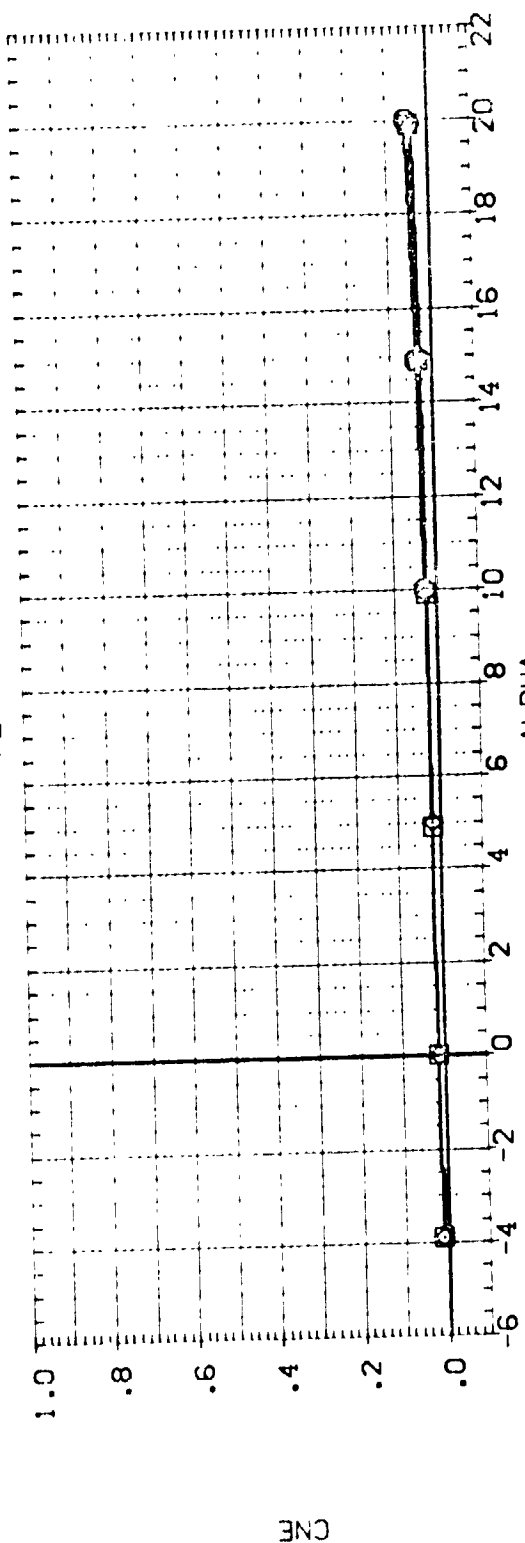
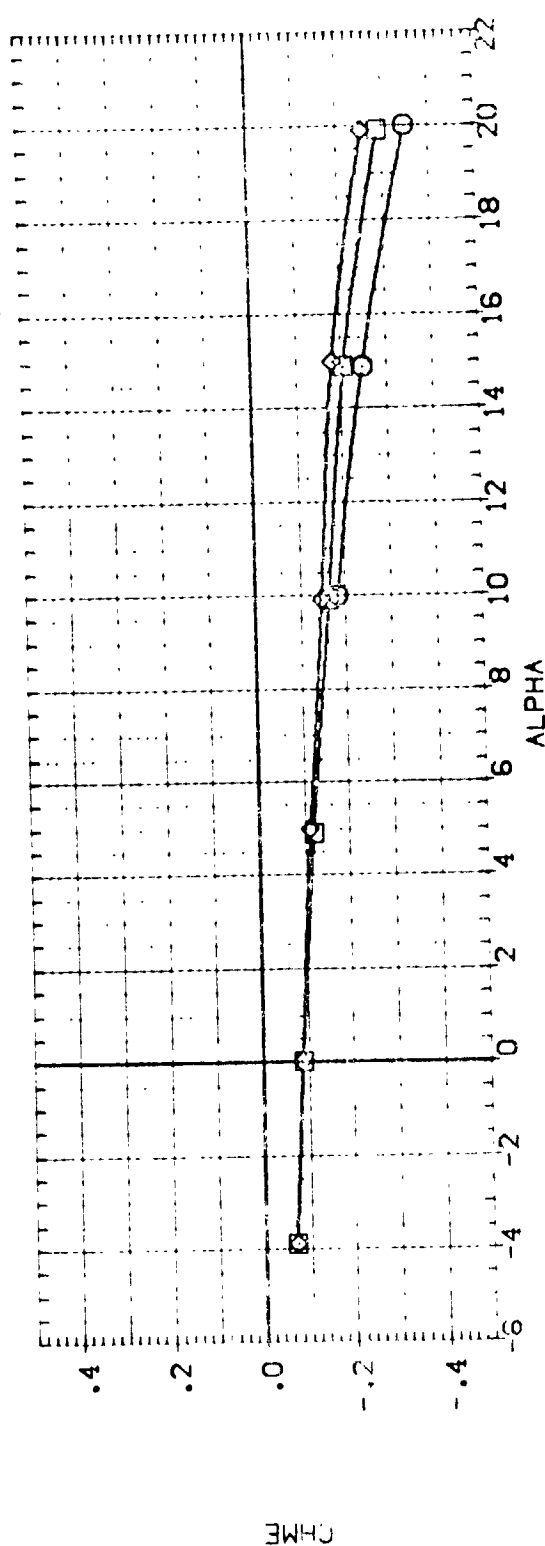


FIG. 9 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.0
(A)MACH = .16

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/V | PTN/P | BD/LAP | REFERENCE INFORMATION |
|-----------------|----------------------------|---------|------|-------|---------|-----------------------|
| (RDVA41) | 0A57B (NAAL 713) 816 CS F1 | -15.000 | .039 | 1.300 | -18.000 | SREF 4.4120 SQ.FT. |
| (RDVA44) | 0A57B (NAAL 713) 816 CS F1 | -15.000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (RDVA38) | 0A57B (NAAL 713) 816 CS F1 | -15.000 | .286 | 1.300 | -18.000 | BREF 37.5050 IN. |
| | | | | | | XREF 43.5000 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

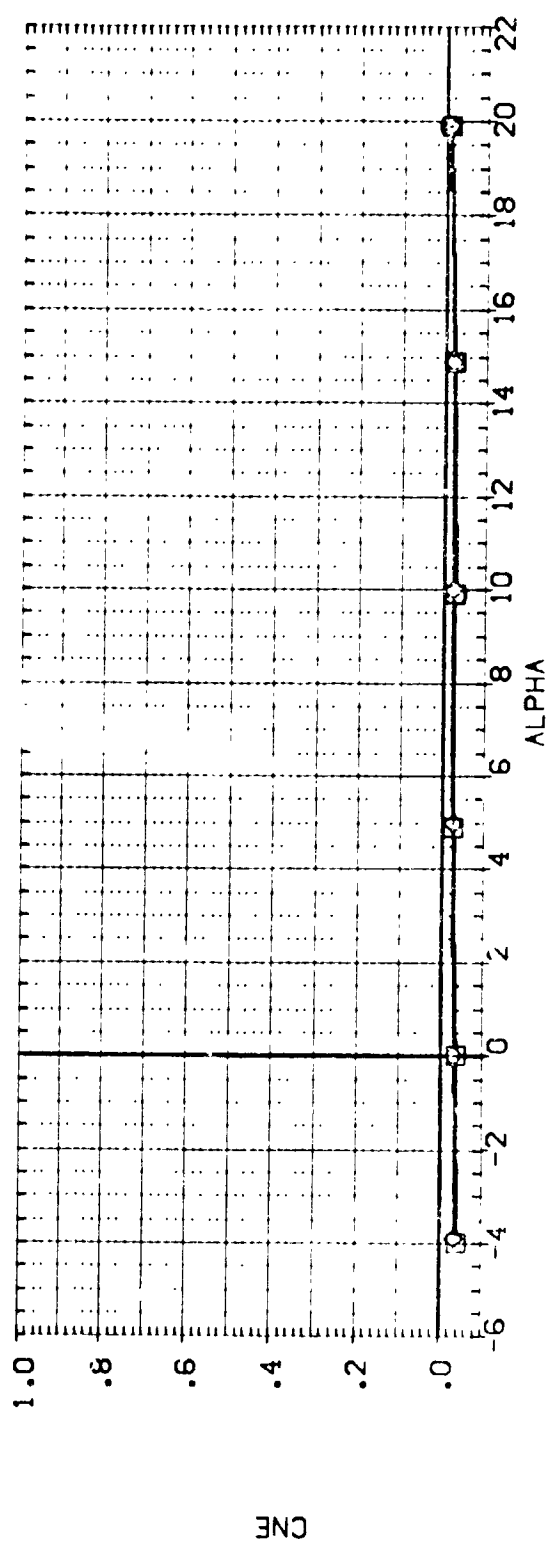
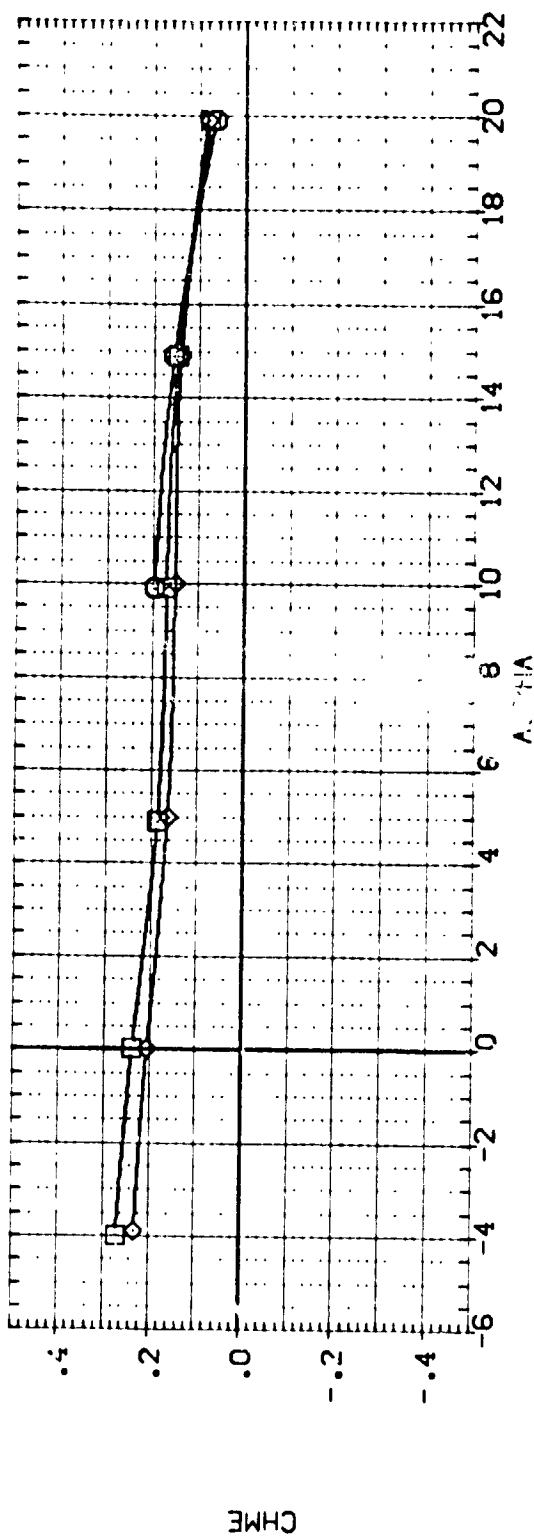


FIG. 10 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.3
 (ADMACH = 1.6)

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (R0VA04) | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .039 | 1.300 | -18.000 | SREF 4.4120 SQ.FT. |
| (R0VA07) | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (R0VA17) | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .286 | 1.300 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XMRP 43.5960 IN. |
| | | | | | | YMRP .0000 IN. |
| | | | | | | ZMRP -.4050 IN. |
| | | | | | | SCALE .0405 |

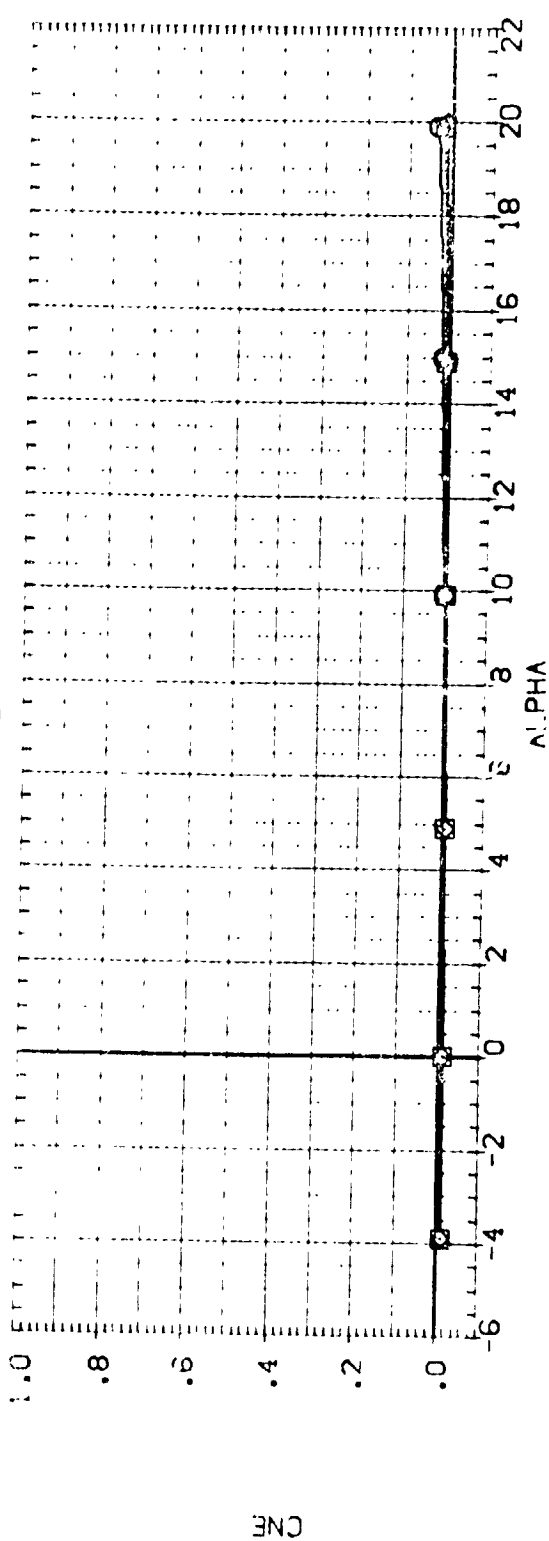
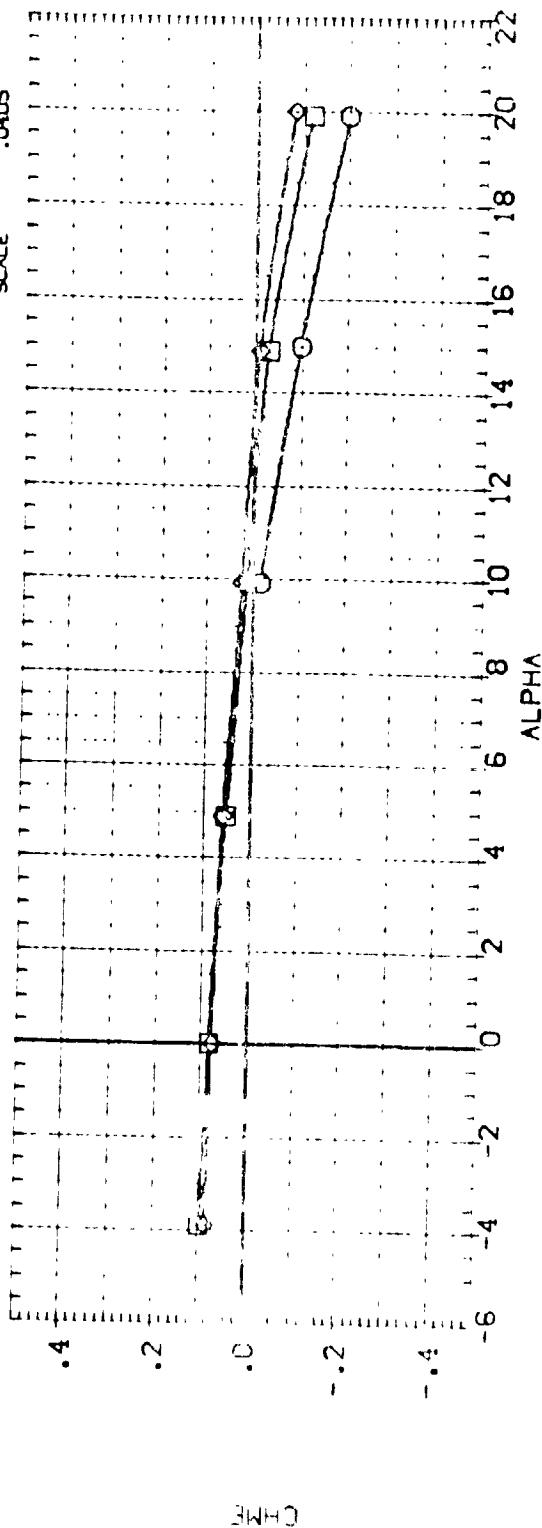


FIG. 10 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.3
 (A)MACH = .16

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVATION | MACH | PTV/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|-----------|------|-------|---------|-----------------------|
| (R0VA32) | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | 15.000 | .039 | 1.300 | -18.000 | SREF 4.4120 SQ.FT. |
| (R0VA23) | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | 15.000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (R0VA35) | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | 15.000 | .286 | 1.300 | -18.000 | BREF 37.9350 IN. |
| | | | | | | YTRP 43.5380 IN. |
| | | | | | | ZTRP .0000 IN. |
| | | | | | | SCALE .0405 |

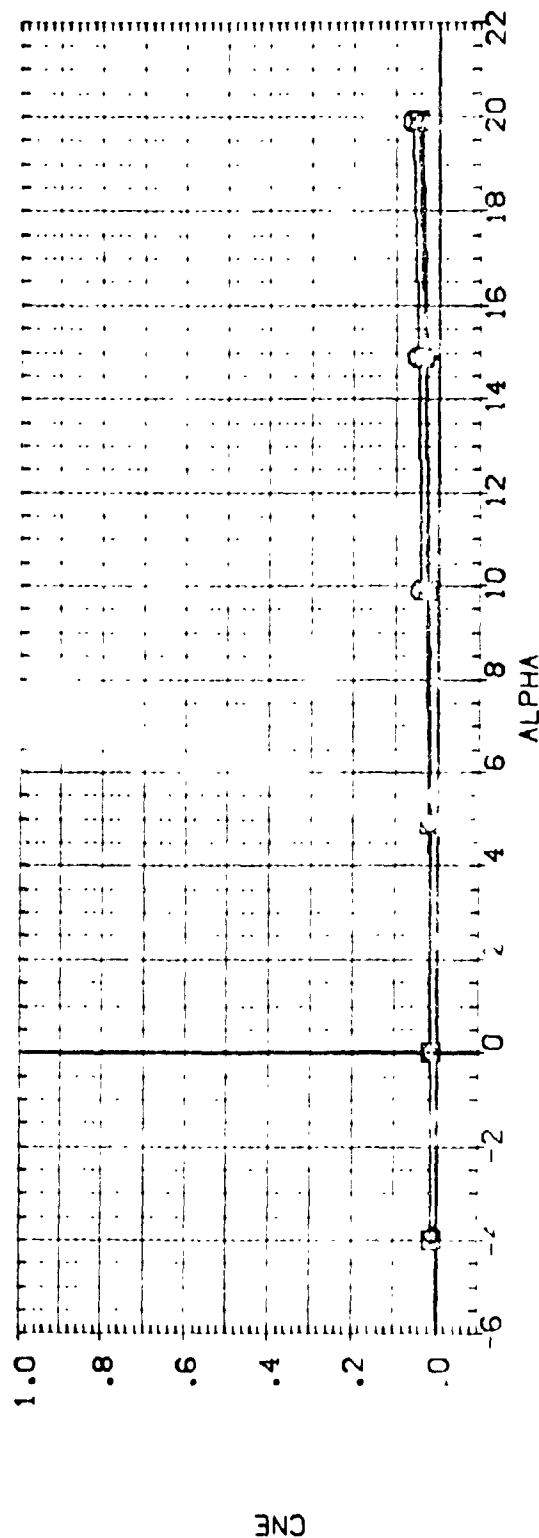
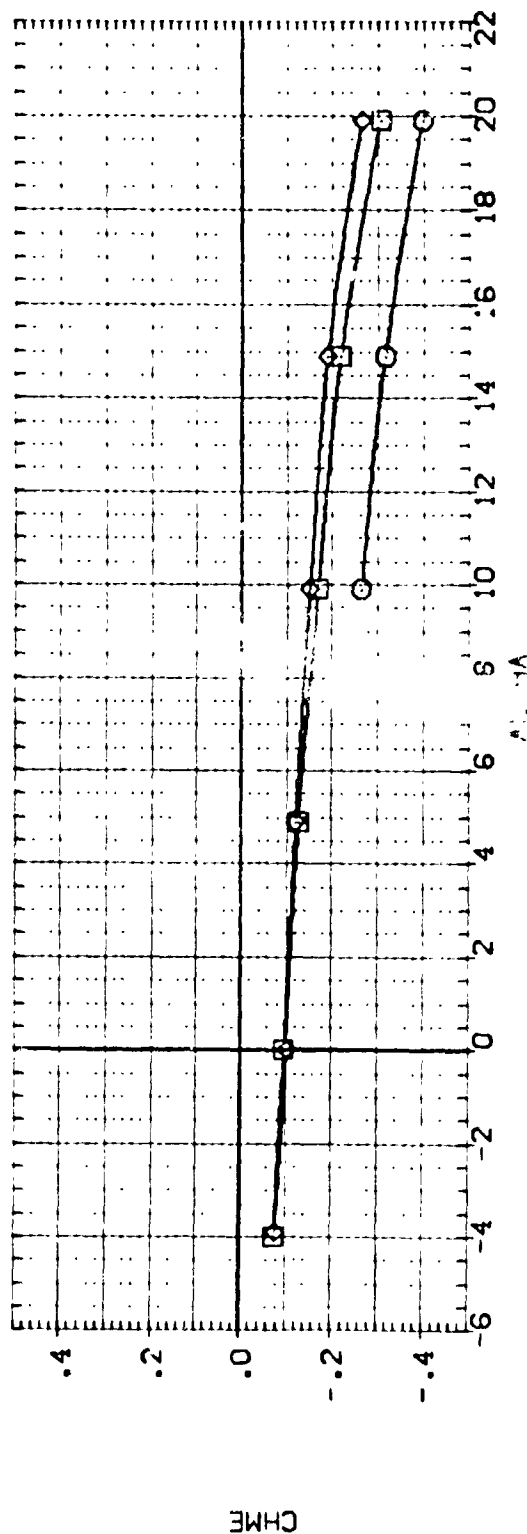


FIG. 10 E 3N HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.3
 (ADMACH = .039)

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | LEVON | H/B | PTV/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----|---------|---------|------|-------|---------|-----------------------|
| (RDVA40) | QAS7B (NAL 713) B16 CS F1 | J40 | V87 E18 | -15.000 | .039 | 1.500 | -18.000 | SREF 4.4120 50. FT. |
| (RDVA43) | QAS7B (NAL 713) B16 CS F1 | J40 | V87 E18 | -15.000 | .125 | 1.500 | -18.000 | LREF 19.2500 IN. |
| (RDVA37) | QAS7B (NAL 713) B16 CS F1 | J40 | V87 E18 | -15.000 | .286 | 1.500 | -18.000 | DREF 37.9300 IN. |
| | | | | | | | | XREF 43.5000 IN. |
| | | | | | | | | YREF .0000 IN. |
| | | | | | | | | ZREF -.4050 IN. |
| | | | | | | | | SCALE .0405 |

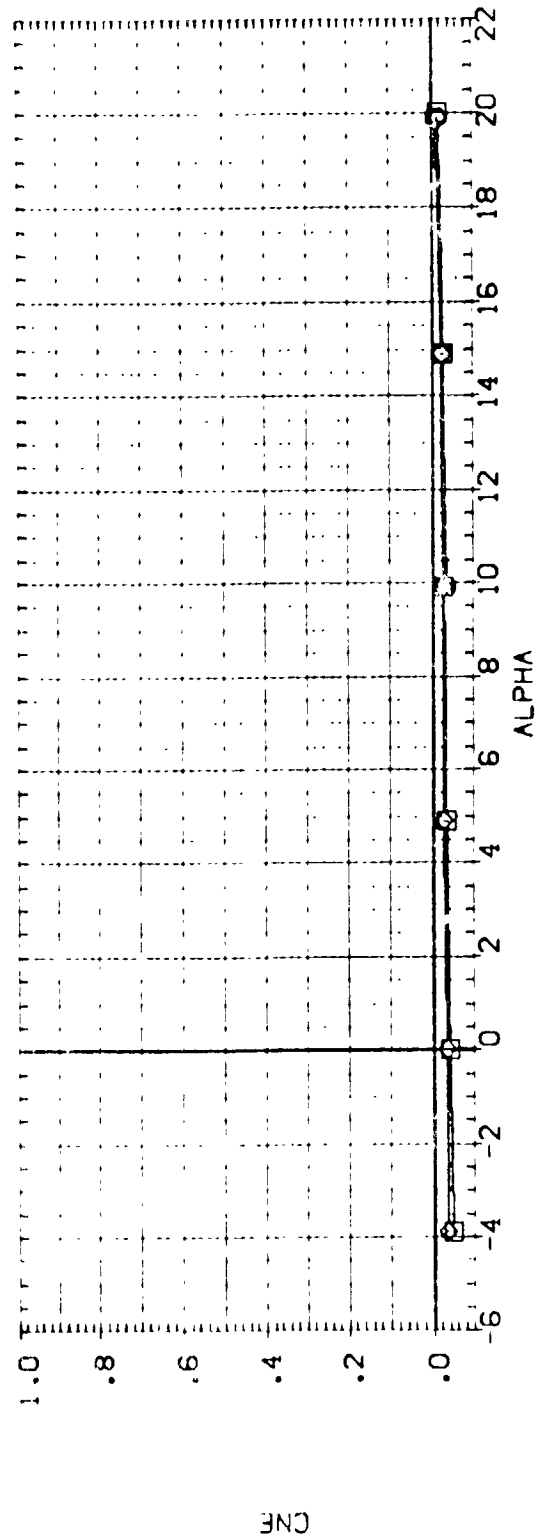
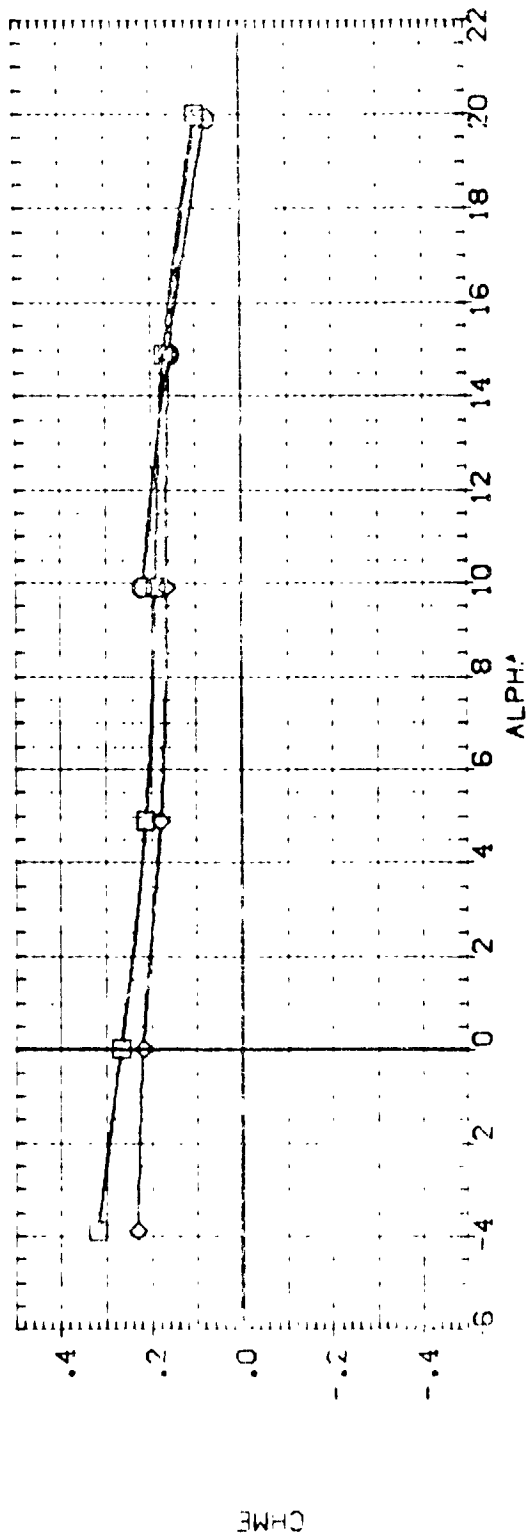


FIG. 11: ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.5
 (A)MACH = .16

| | | | | | | |
|-----------------|--|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (RDVA05) | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .039 | 1.500 | -18.000 | SRE 4.4120 50. FT. |
| (RDVA08) | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .125 | 1.500 | -18.000 | LREF 19.2300 IN. |
| (RDVA16) | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .286 | 1.500 | -18.000 | BREF 37.5350 IN. |
| | | | | | | XTRP 43.5580 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

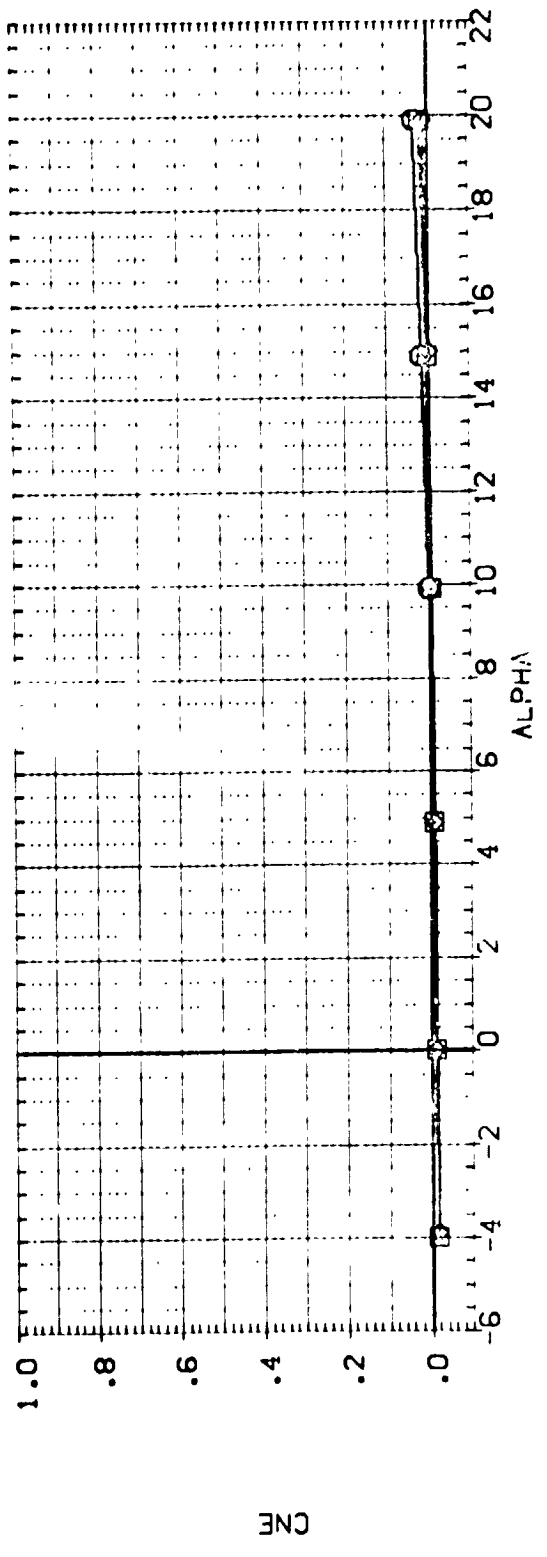
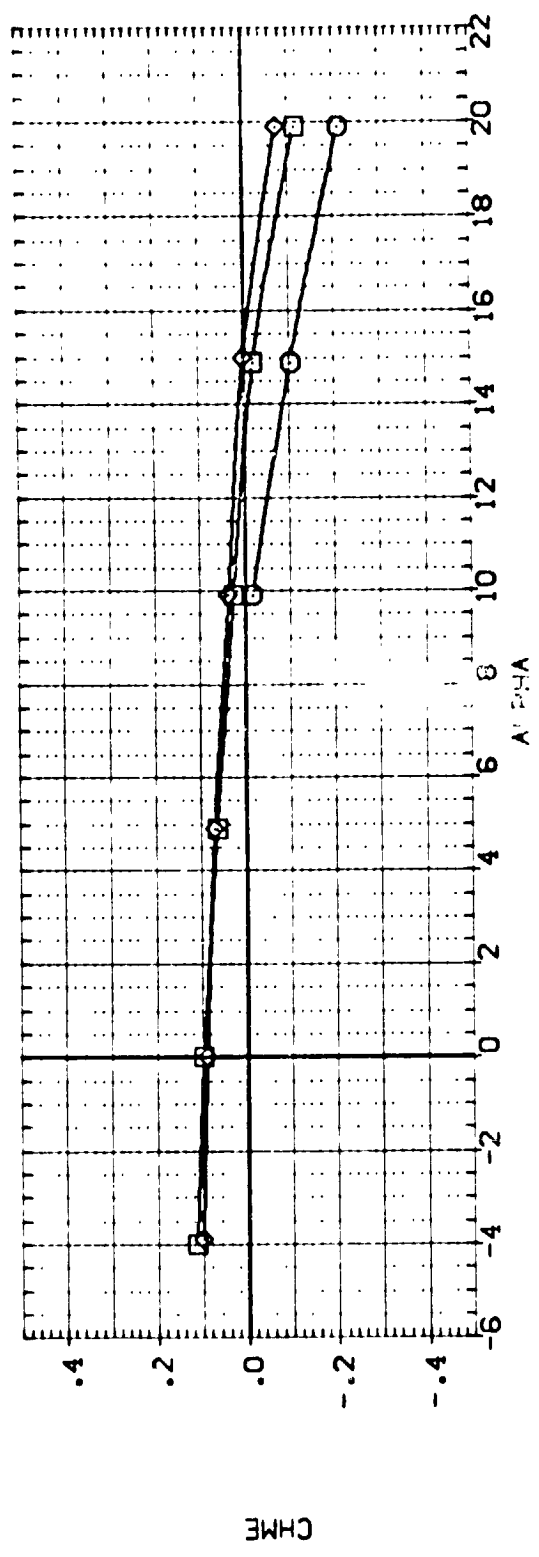


FIG. 11 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.5
 (A)MACH = 1.5
 PAGE 23

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTM/P | BD/FLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (RDVA31) | QAS7B (NAAL 713) 816 CS F1 J40 V87 E18 | 15.000 | .038 | 1.500 | -18.000 | SREF 4.4120 50.57. |
| (RDVA28) | QAS7B (NAAL 713) 816 CS F1 J40 V87 E18 | 15.000 | .125 | 1.500 | -18.000 | LREF 19.7220 IN. |
| (RDVA34) | QAS7B (NAAL 713) 816 CS F1 J40 V87 E18 | 15.000 | .285 | 1.500 | -18.000 | SREF 37.5350 IN. |
| | | | | | | XREF 43.5500 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

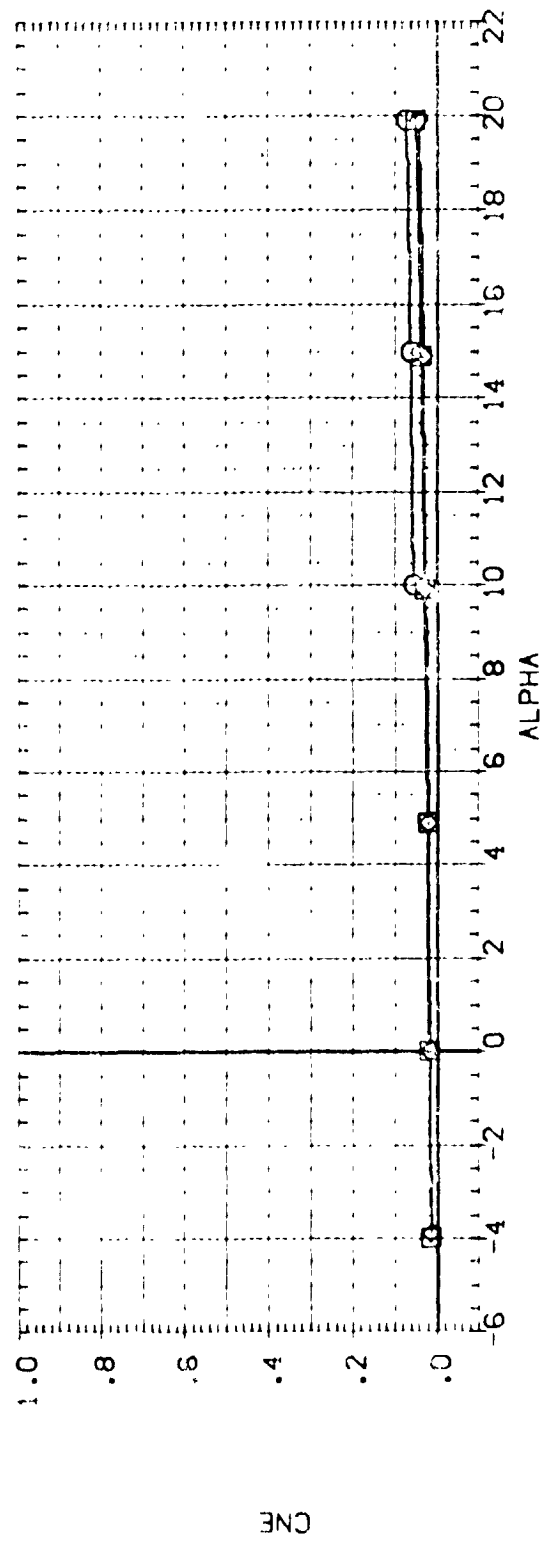
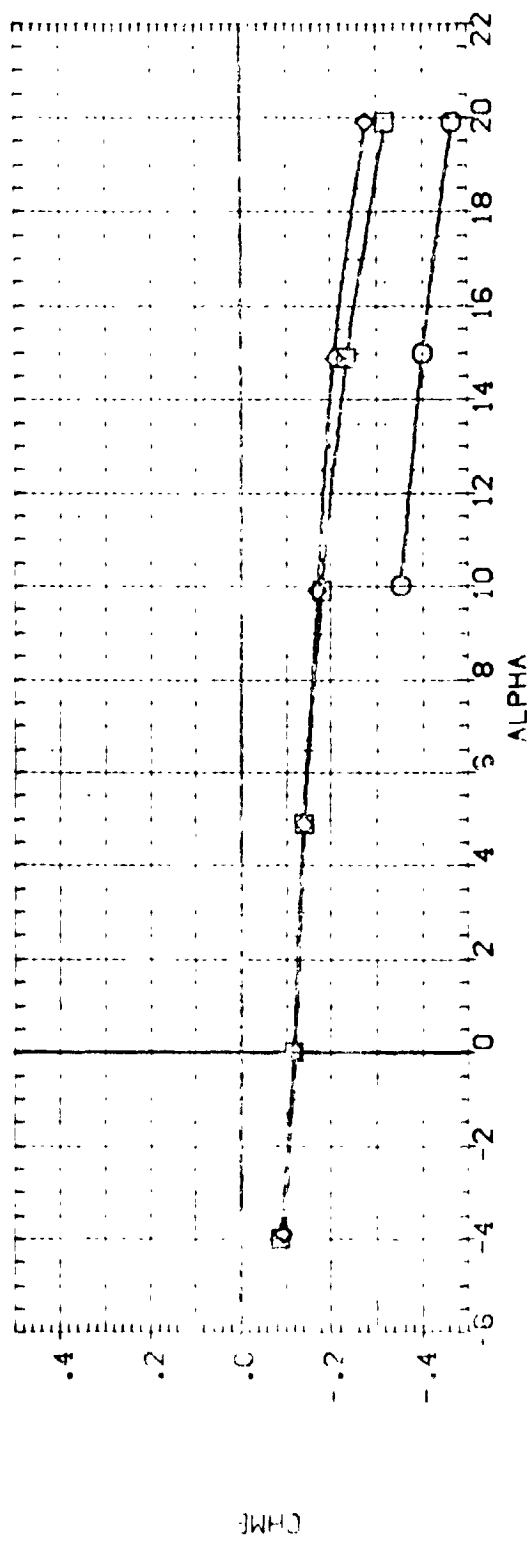


FIG. 11 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J40 AT NOZZLE EXIT PR OF 1.5
(A)MACH = .16

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------------------|--------|------|-------|---------|-----------------------|
| (RDVA56) | QAS7B (NAL 713) 816 CS F1 J41 V87 E18 | .000 | .039 | 1.000 | -18.000 | SREF 4.4120 50.FT. |
| (RDVA58) | QAS7B (NAL 713) 816 CS F1 J41 V87 E18 | .000 | .125 | 1.000 | -18.000 | LREF 19.2300 IN. |
| (RDVA53) | QAS7B (NAL 713) 816 CS F1 J41 V87 E18 | .000 | .266 | 1.000 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XREF 43.5580 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.1050 IN. |
| | | | | | | SCALE .0405 |

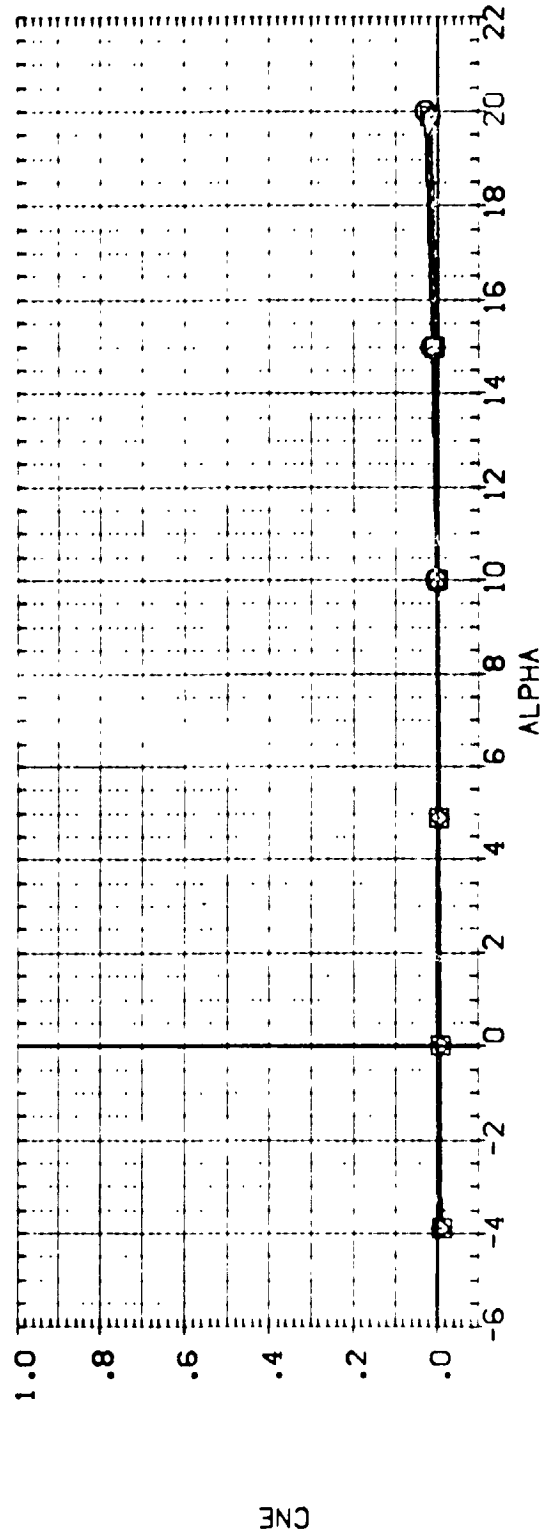
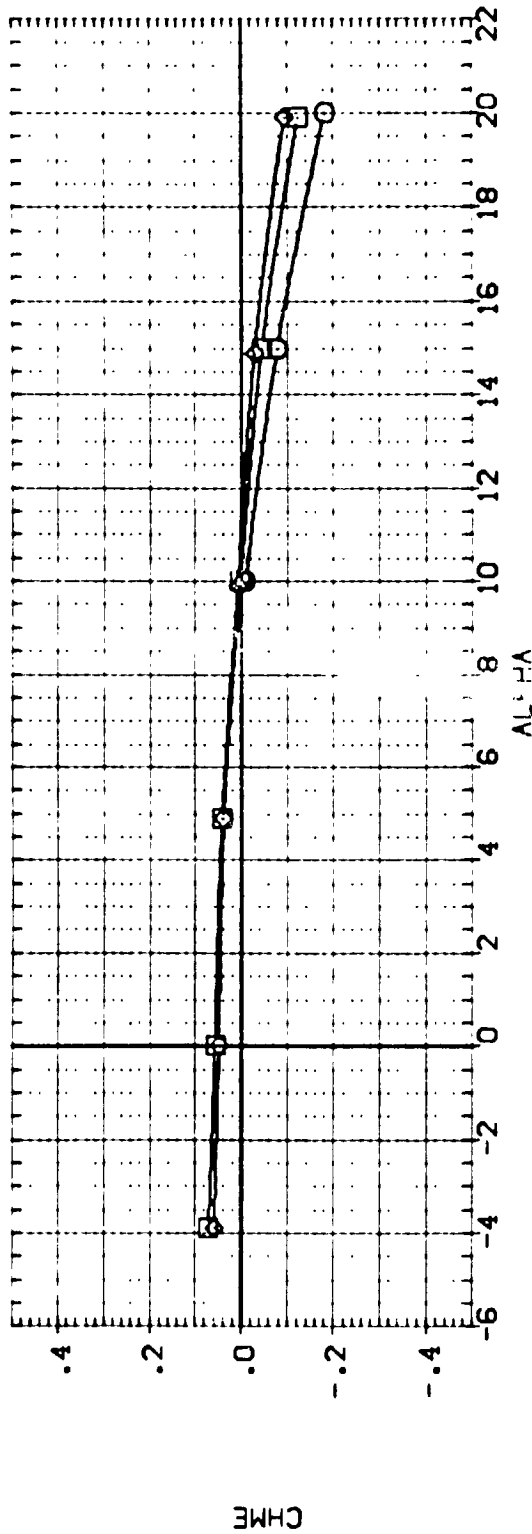


FIG. 12 EL 3, HINGE MOMENT AND NORMAL FORCE WITH J41 AT NOZZLE EXIT PR OF 1.0
 (ADMACH = .18) PAGE 25

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J41 | V87 E18 | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|---------|---------|--------|-------|---------|-----------------------|
| (R0V419) | 84578 (NAAL 713) | 816 CS F1 | J41 | V87 E18 | 15.000 | 1.000 | -18.000 | SREF 4.4123 SQ.FT. |
| (R0V447) | 84579 (NAAL 713) | 816 CS F1 | J41 | V87 E18 | 15.000 | 1.000 | -18.000 | LREF 19.2803 IN. |
| (R0V451) | 84579 (NAAL 713) | 816 CS F1 | J41 | V87 E18 | 15.000 | 1.000 | -18.000 | BREF 37.5503 IN. |
| | | | | | | | | XREF 43.5503 IN. |
| | | | | | | | | YREF .0003 IN. |
| | | | | | | | | ZREF -.4053 IN. |
| | | | | | | | | SCALE .0403 |

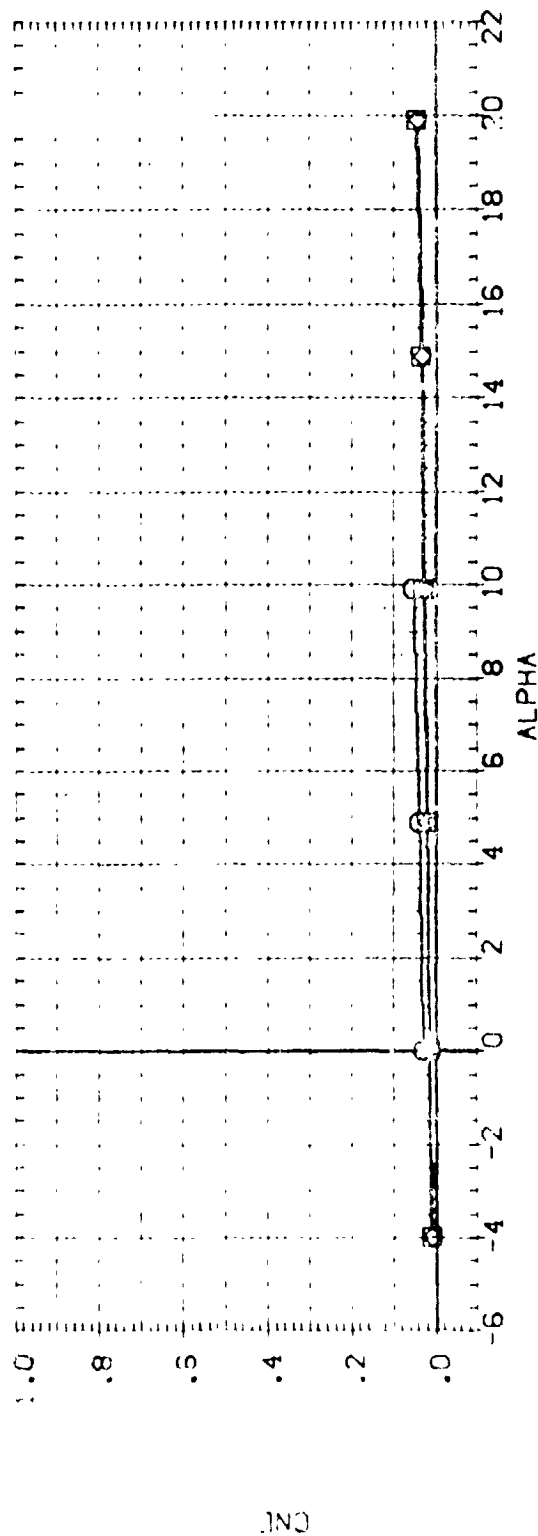
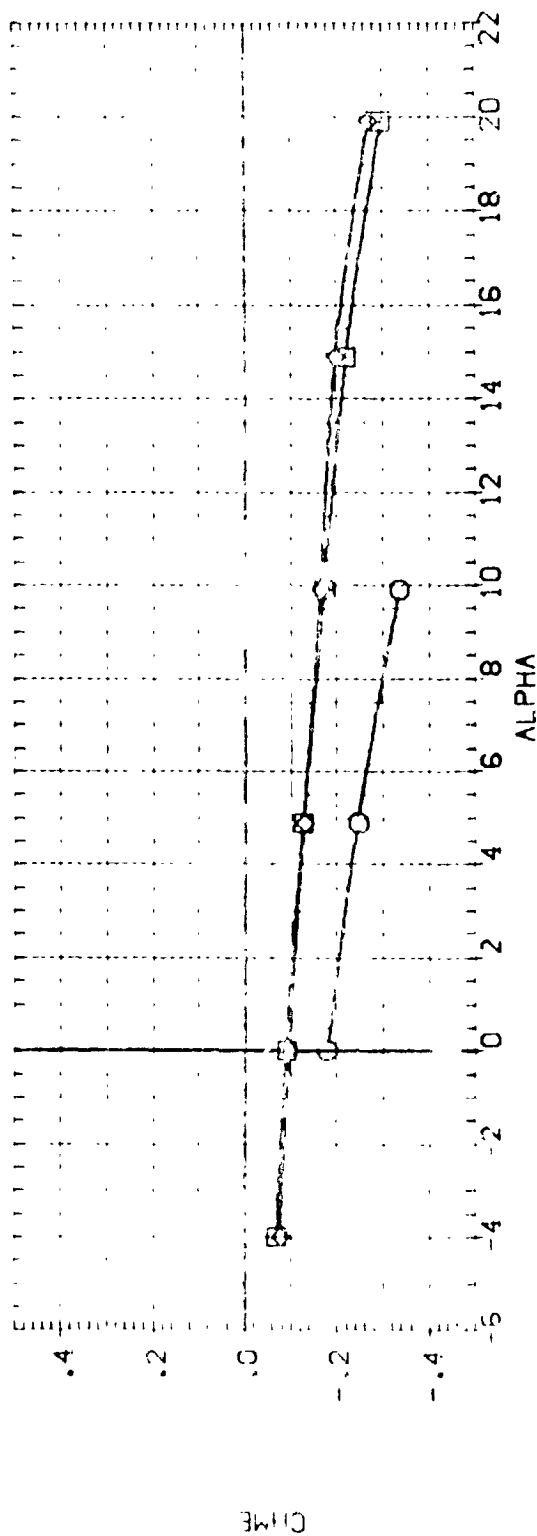


FIG. 12 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J41 AT NOZZLE EXIT PR OF 1.0
(A)MACH = .16

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTMP | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (RDA54) | QA578 (NAAL 713) B16 CS F1 J41 V87 E18 | .000 | .009 | 1.300 | -18.000 | SREF 4.4120 50. FT. |
| (RDA57) | QA578 (NAAL 713) B16 CS F1 J41 V87 E18 | .000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (RDA52) | QA578 (NAAL 713) B16 CS F1 J41 V87 E18 | .000 | .286 | 1.300 | -18.000 | BREF 37.5950 IN. |
| | | | | | | XREF 43.5950 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

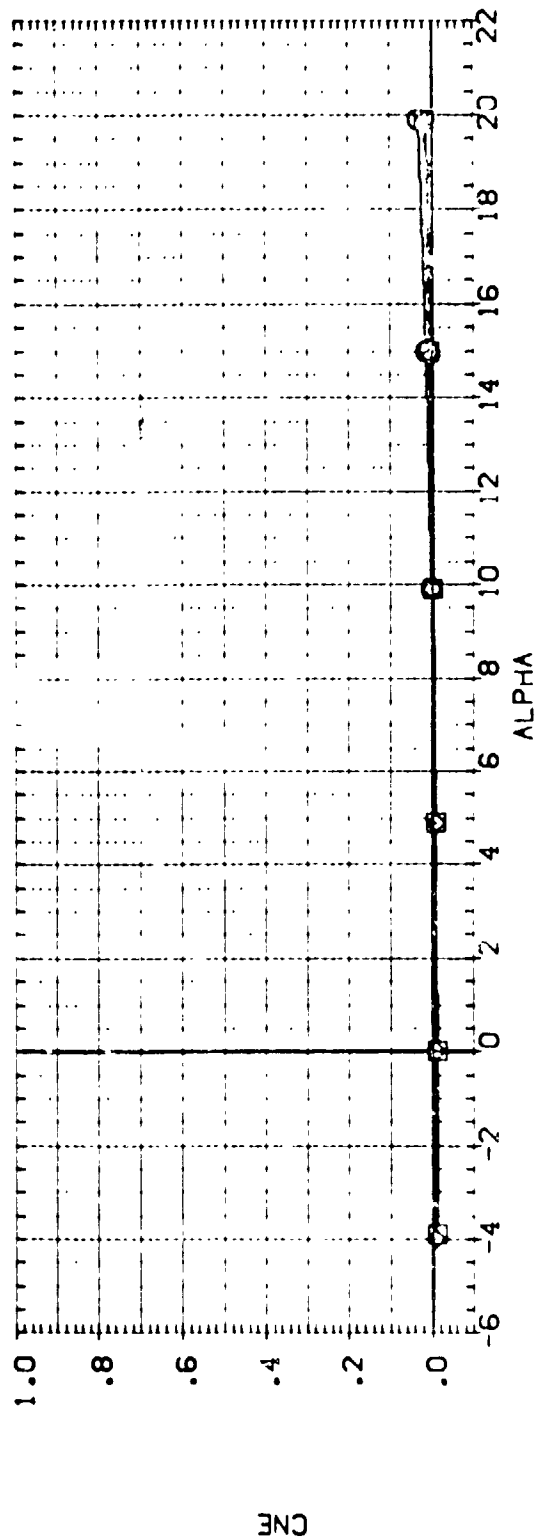
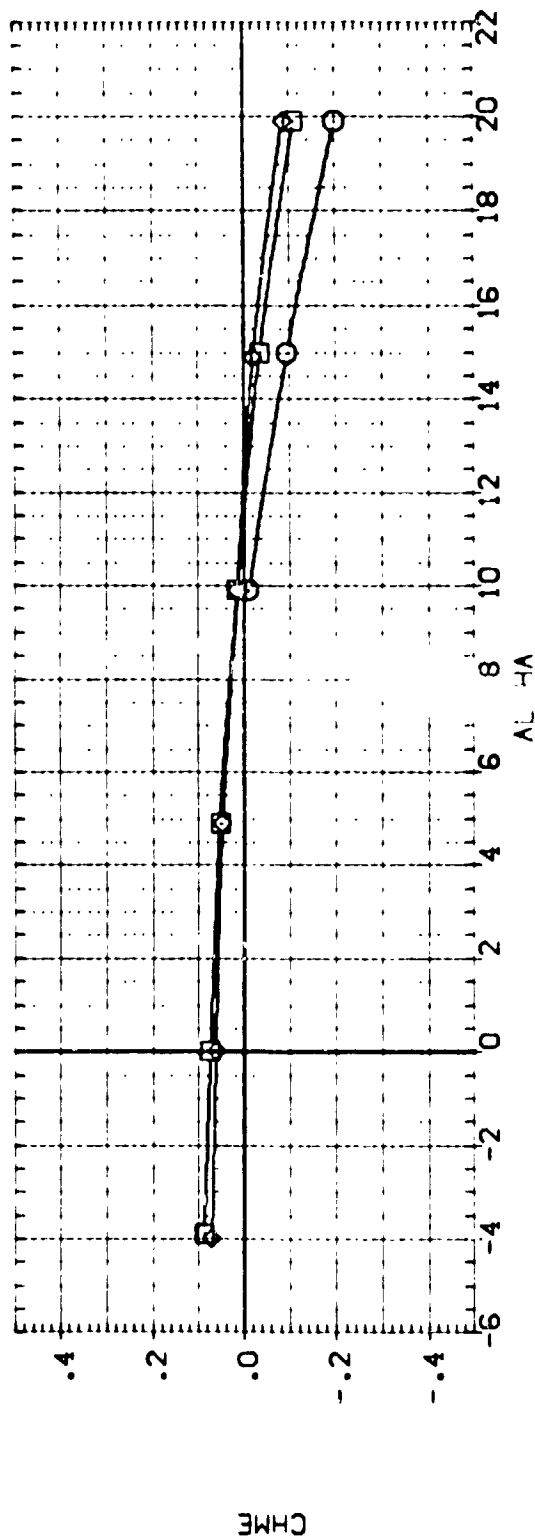


FIG. 12 ELEVON HINGE MOMENT AND NORMAL FORCE W1 - J41 AT NOZZLE EXIT PR OF 1.3
 (A)MACH = .16

| | | | | | | | | | | | | | |
|-----------------|-------|---------------------------|-----------|--------|---------|--------|------|-------|---------|--------|---------|-----------------------|--|
| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | H/V | | PTN/P | | BOFLAP | | REFERENCE INFORMATION | |
| (RC-A48) | Q-578 | (NAL 713) | B16 CS F1 | J41 | V87 E18 | 15.000 | .038 | 1.300 | -18.000 | SREF | 4.4150 | 50. FT. | |
| (RC-A46) | Q-578 | (NAL 713) | B16 CS F1 | J41 | V87 E18 | 15.000 | .125 | 1.300 | -18.000 | LREF | 19.2370 | IN. | |
| (RC-A50) | Q-578 | (NAL 713) | B16 CS F1 | J41 | V87 E18 | 15.000 | .286 | 1.300 | -18.000 | BREF | 37.5370 | IN. | |
| | | | | | | | | | | XREF | 43.5370 | IN. | |
| | | | | | | | | | | YREF | 1.0000 | IN. | |
| | | | | | | | | | | ZREF | -1.0000 | IN. | |
| | | | | | | | | | | SCALE | .345 | | |

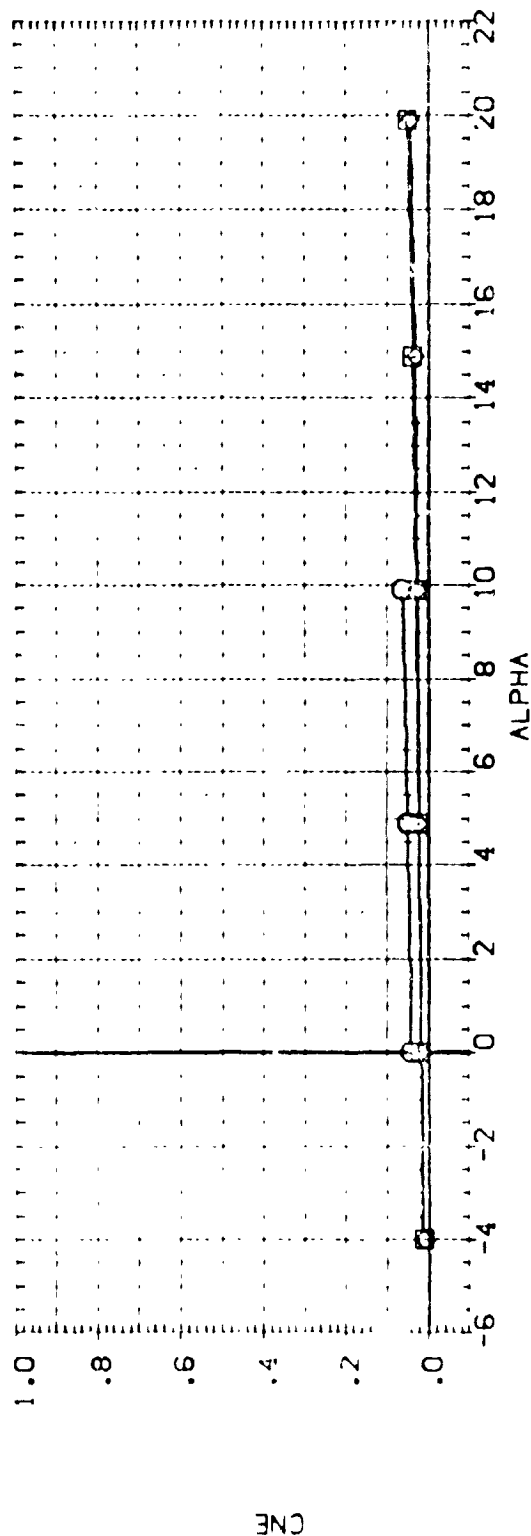
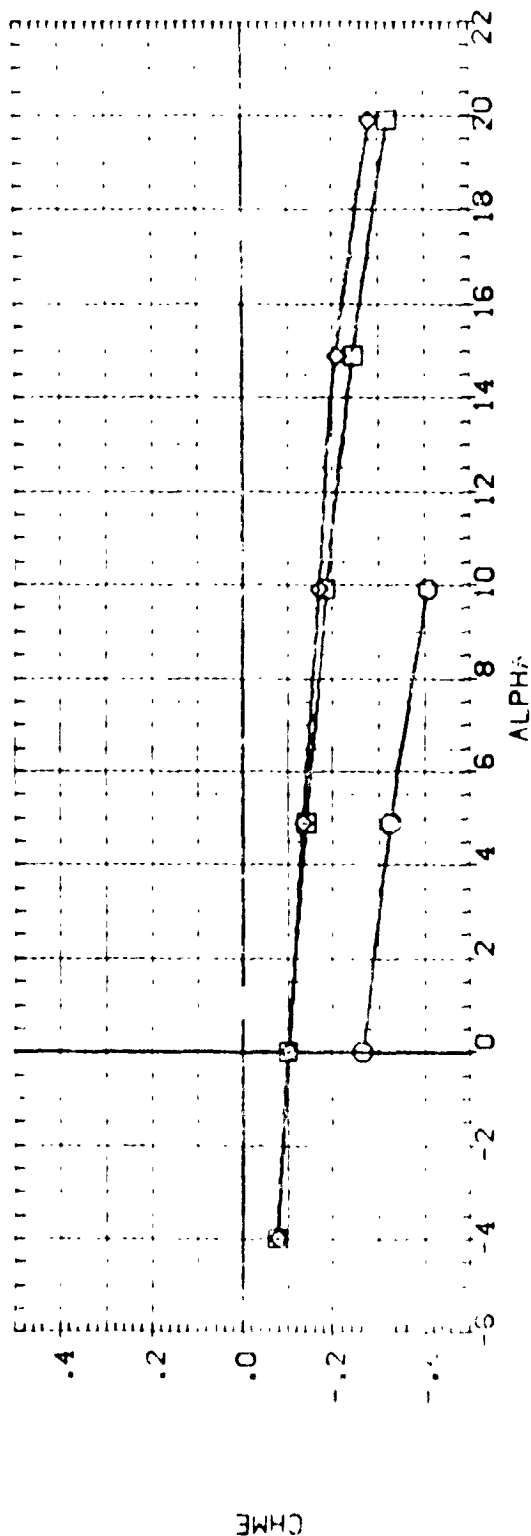


FIG. 13 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J41 AT NOZZLE EXIT PR OF 1.3
(A)MACH = .16

| | | | | | | |
|-----------------|--|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | MACH | PTMAP | BDFLAP | REFERENCE INFORMATION |
| (RQVAG1) | 0A578 (NAAL 713) B16 CS F1 J42 W07 E18 | .000 | .008 | 1.000 | -18.000 | SREF 4.4125 SO.FT. |
| (RQVAG7) | 0A578 (NAAL 713) B16 CS F1 J42 W07 E18 | .000 | .125 | 1.000 | -18.000 | LREF 19.2300 IN. |
| (RQVAG0) | 0A578 (NAAL 713) B16 CS F1 J42 W07 E18 | .000 | .205 | 1.000 | -18.000 | SREF 37.9350 IN. |
| | | | | | | XREF 43.5000 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

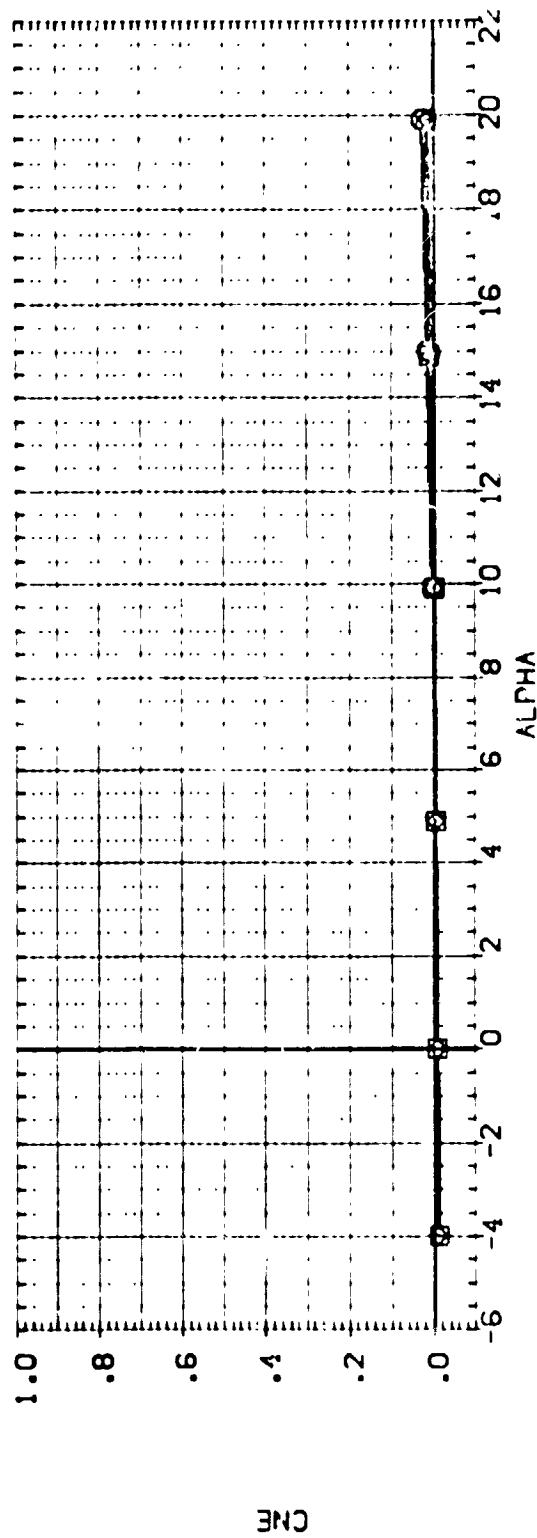
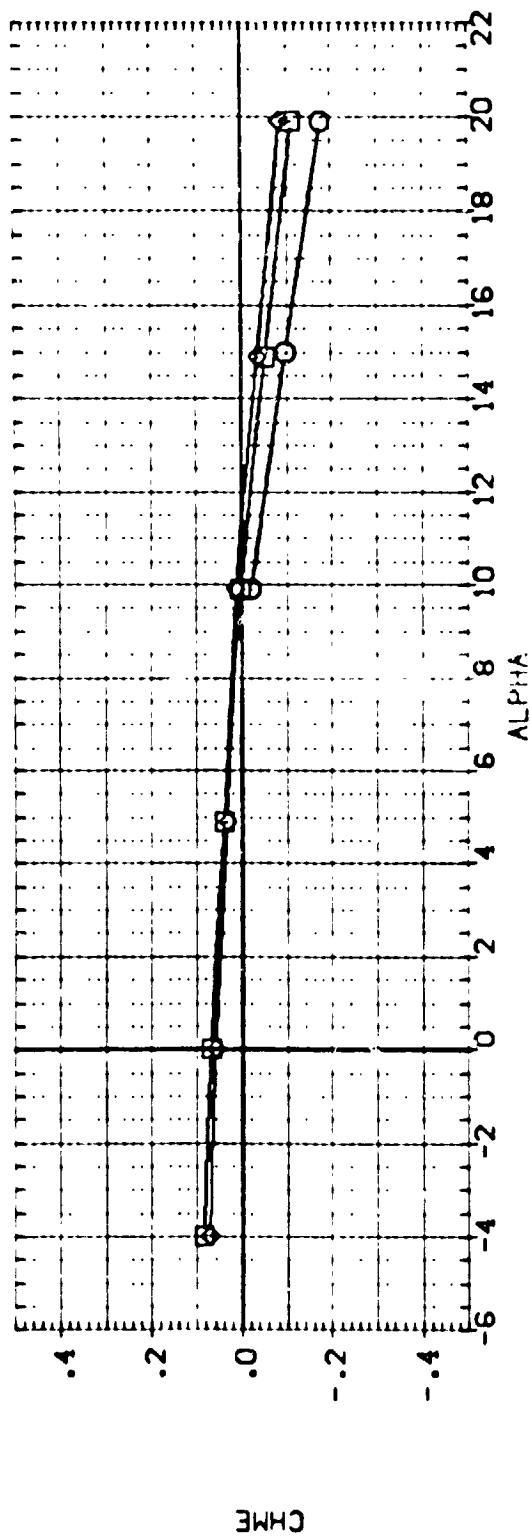


FIG. 14 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J42 AT NOZZLE EXIT PR OF 1.0
MACH = .15

| | | | | | | |
|-----------------|----------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BLT." | REFERENCE INFORMATION |
| (H0VAG3) | 0A578 (NAAL 713) 816 CS F1 | .000 | .039 | 1.300 | -18.000 | SREF 1.4120 50. FT. |
| (H0VAG3) | 0A578 (NAAL 713) 816 CS F1 | .000 | .123 | 1.300 | -18.000 | UREF 19.2300 IN. |
| (H0VAG3) | 0A578 (NAAL 713) 816 CS F1 | .000 | .266 | 1.300 | -18.000 | UREF 37.9350 IN. |
| | | | | | | YREF 43.5590 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -4.750 IN. |
| | | | | | | SCALE .0405 |

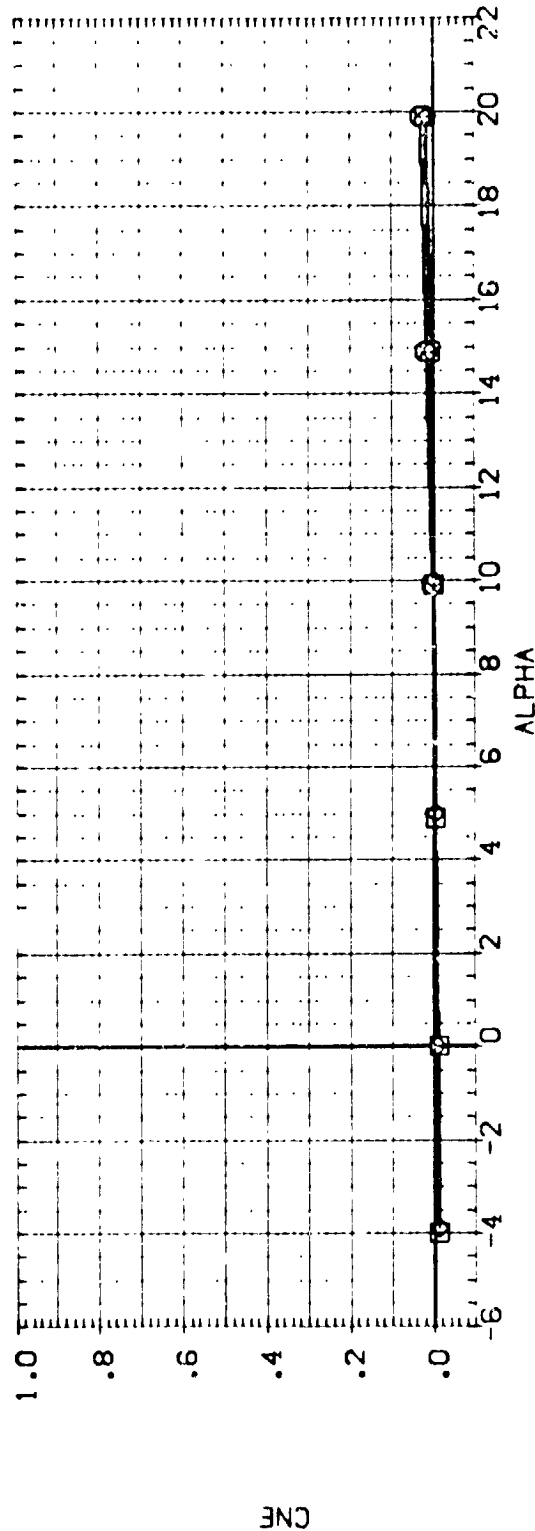
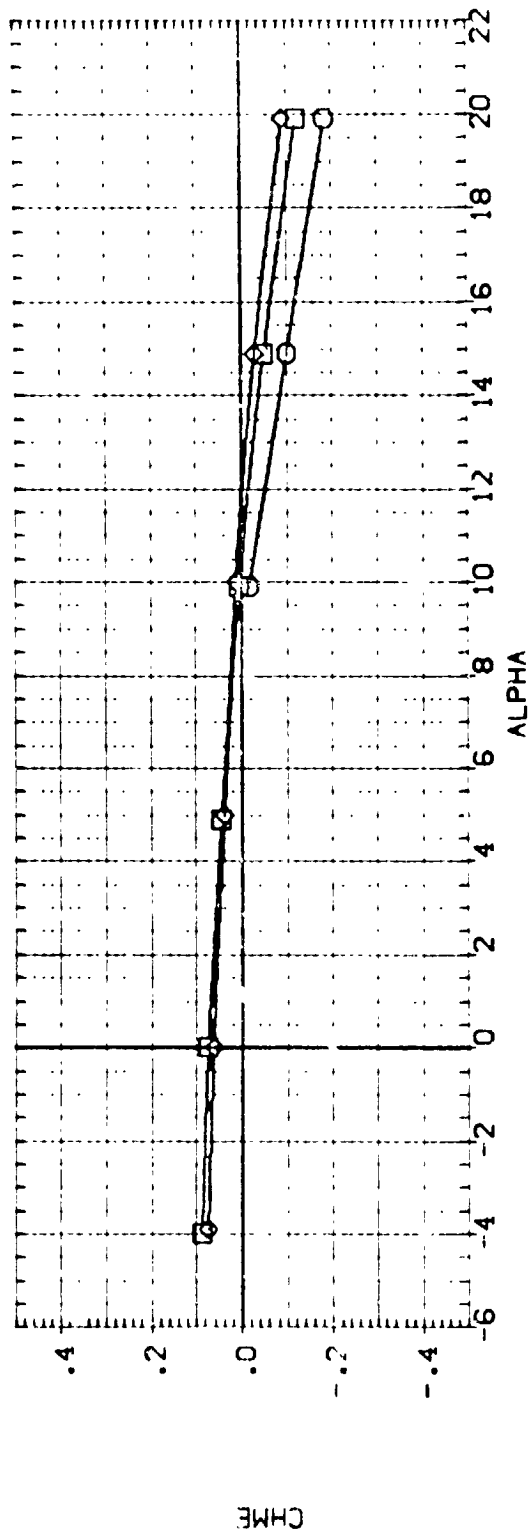


FIG. 15 ELEVON HINGE MOMENT AND NORMAL FORCE WITH J42 AT NOZZLE EXIT PR OF 1.3

(A)MACH = .16

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTW/P | BD/LAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (R-462) | QAS7B (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .039 | 1.500 | -18.000 | SREF 4.4120 SQ.FT. |
| (R0VAGS) | QAS7B (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .125 | 1.500 | -18.000 | LREF 19.2300 IN. |
| (R0VAGS) | QAS7B (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .286 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XMRP 43.5980 IN. |
| | | | | | | YMRP .0000 IN. |
| | | | | | | ZMRP -.4050 IN. |
| | | | | | | SCALE .0405 |

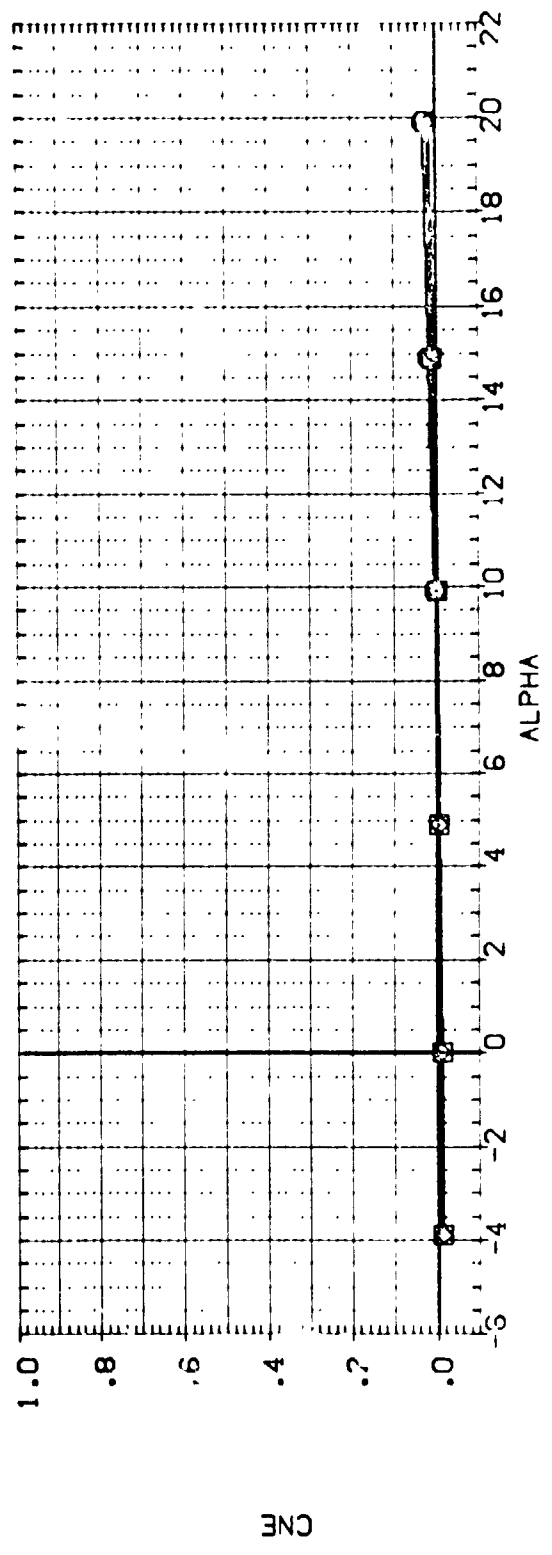
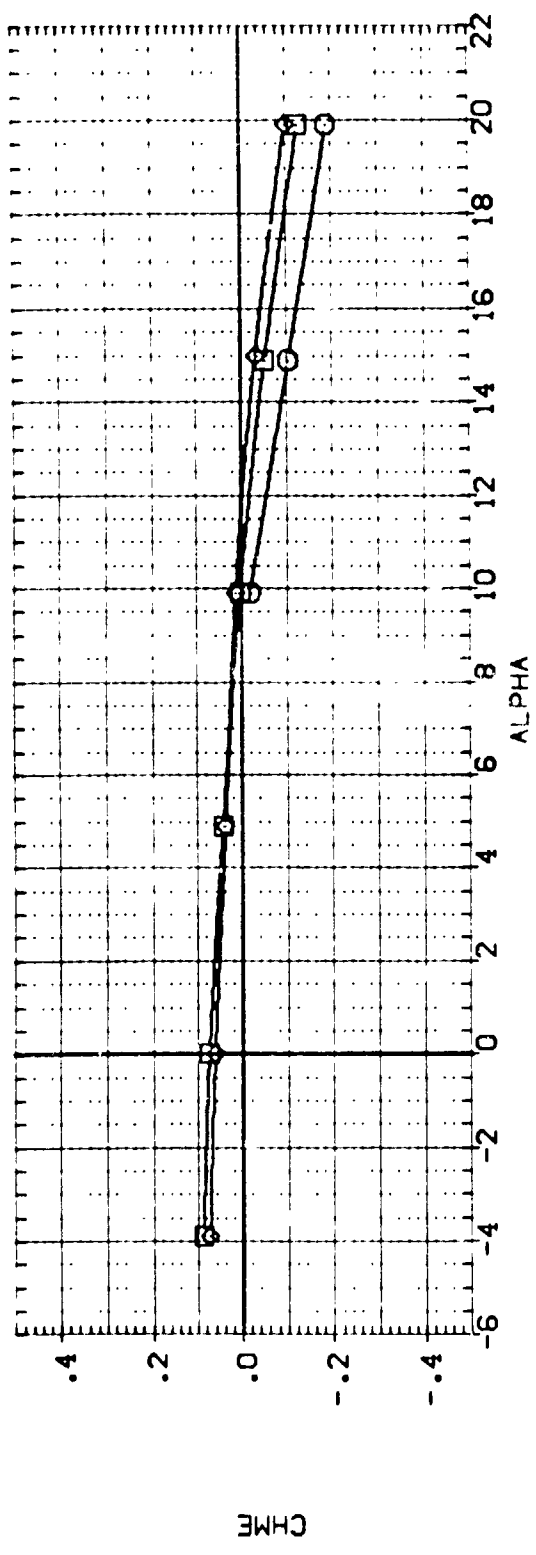


FIG. 16 ELE ON HINGE MOMENT AND NORMAL FORCE WITH J42 AT NOZZLE EXIT PR OF 1.5
 (A)MACH = .16 PAGE 31

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| ○ | CPTBF1 | MACH .165 | SREF 4.4120 SQ.FT. |
| □ | CPTBF2 | BETA 1.000 | LREF 19.2300 IN. |
| ◇ | CPTBF3 | H/B .039 | BREF 37.9350 IN. |
| △ | CPBGF1 | BOFLAP -18.000 | XTRP 43.5980 IN. |
| ▽ | CPBGF2 | ELEVON -15.000 | YTRP .0000 IN. |
| ◊ | CPBGF3 | | ZTRP -.4050 IN. |
| | | | SCALE .0405 |

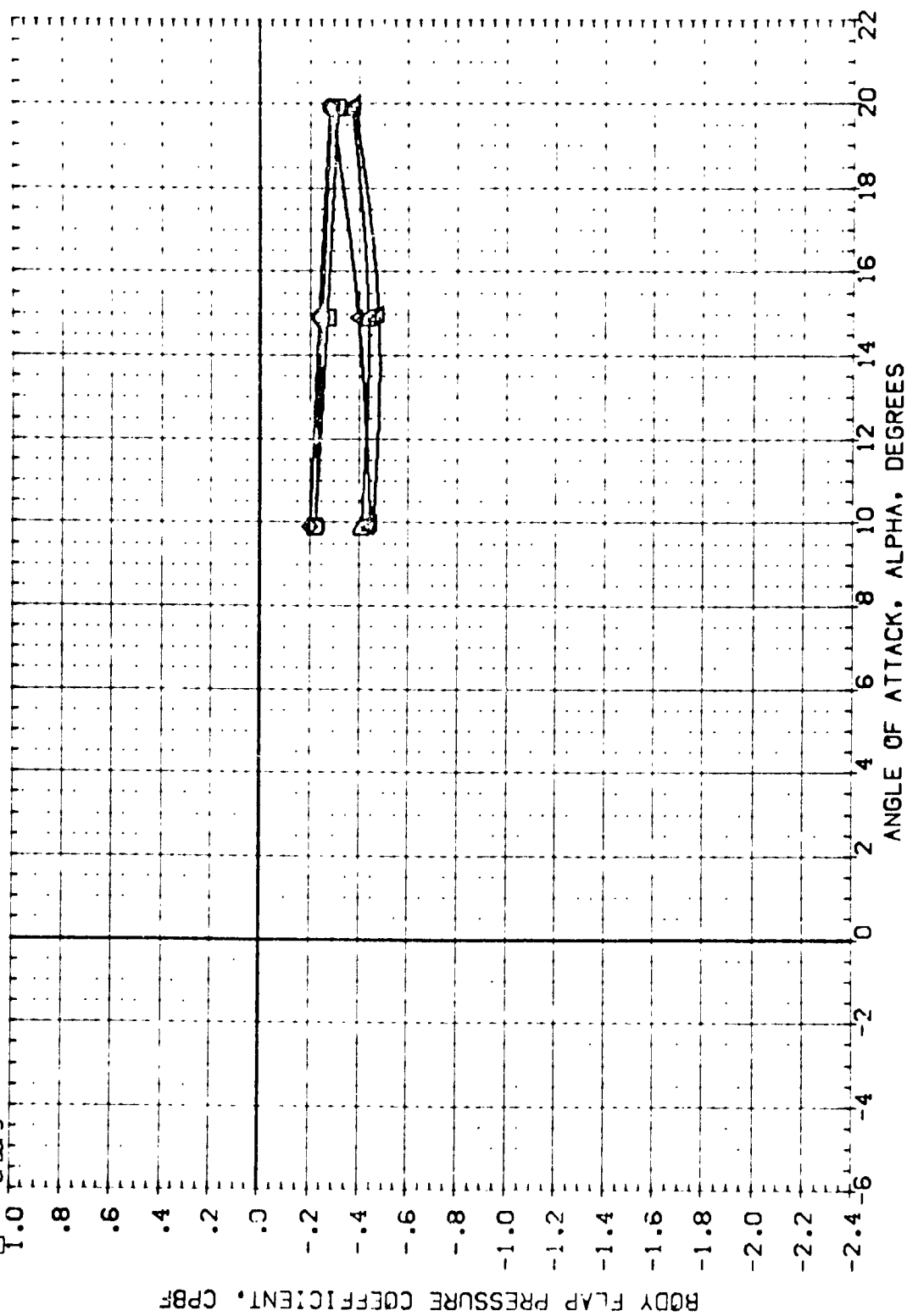


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40 , -15 ELEVON AND -18 BDFLAP

| SYMBOL | DATA | MACH | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|--------|-------------------|-----------------------|
| □ | CPTBF1 | PTN/P | .165 BETA | SREF 1.4120 SQ.FT. |
| ◇ | CPTBF2 | BDFLAP | 1.300 H/B | LREF 19.2300 IN. |
| △ | CPTBF3 | | -18.000 ELEVON | BREF 37.9350 IN. |
| ▽ | CPBFF1 | | | XMRP 43.5980 IN. |
| ▽ | CPBFF2 | | | YMRP .0000 IN. |
| ▽ | CPBFF3 | | | ZMRP -.4050 IN. |
| | | | | SCALE .0405 |

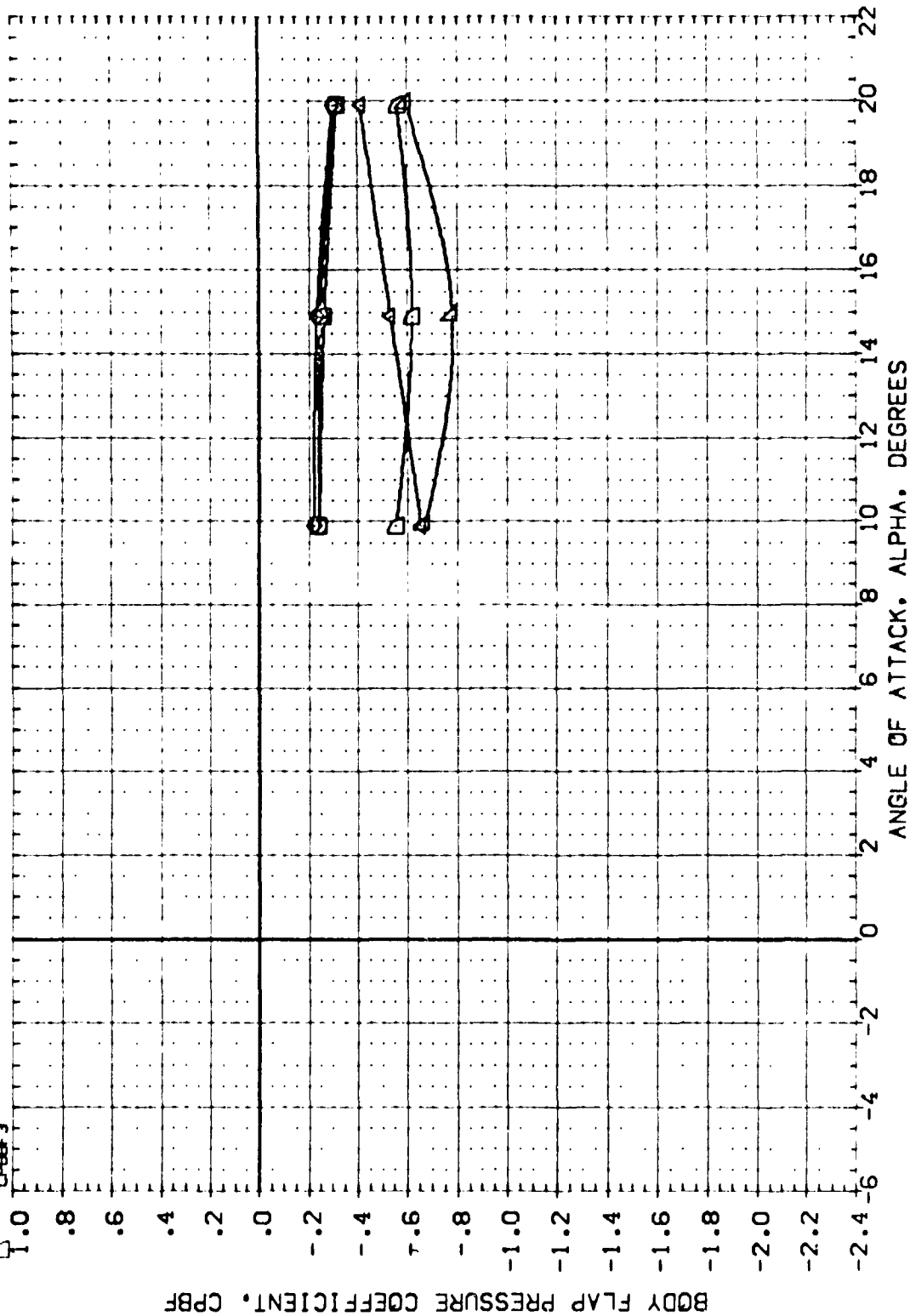


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDFLAP

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ40)

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| ○ | CPTBF1 | MACH | SREF |
| □ | CPTBF2 | .165 BETA | LRREF |
| ◇ | CPTBF3 | 1.500 M/VB | BRREF |
| △ | CPBBF1 | -18.000 ELEVON | XMRP |
| ▽ | CPBBF2 | -15.000 | YMRP |
| ◊ | CPBBF3 | | ZMRP |
| | | | SCALE |
| | | | .0405 |

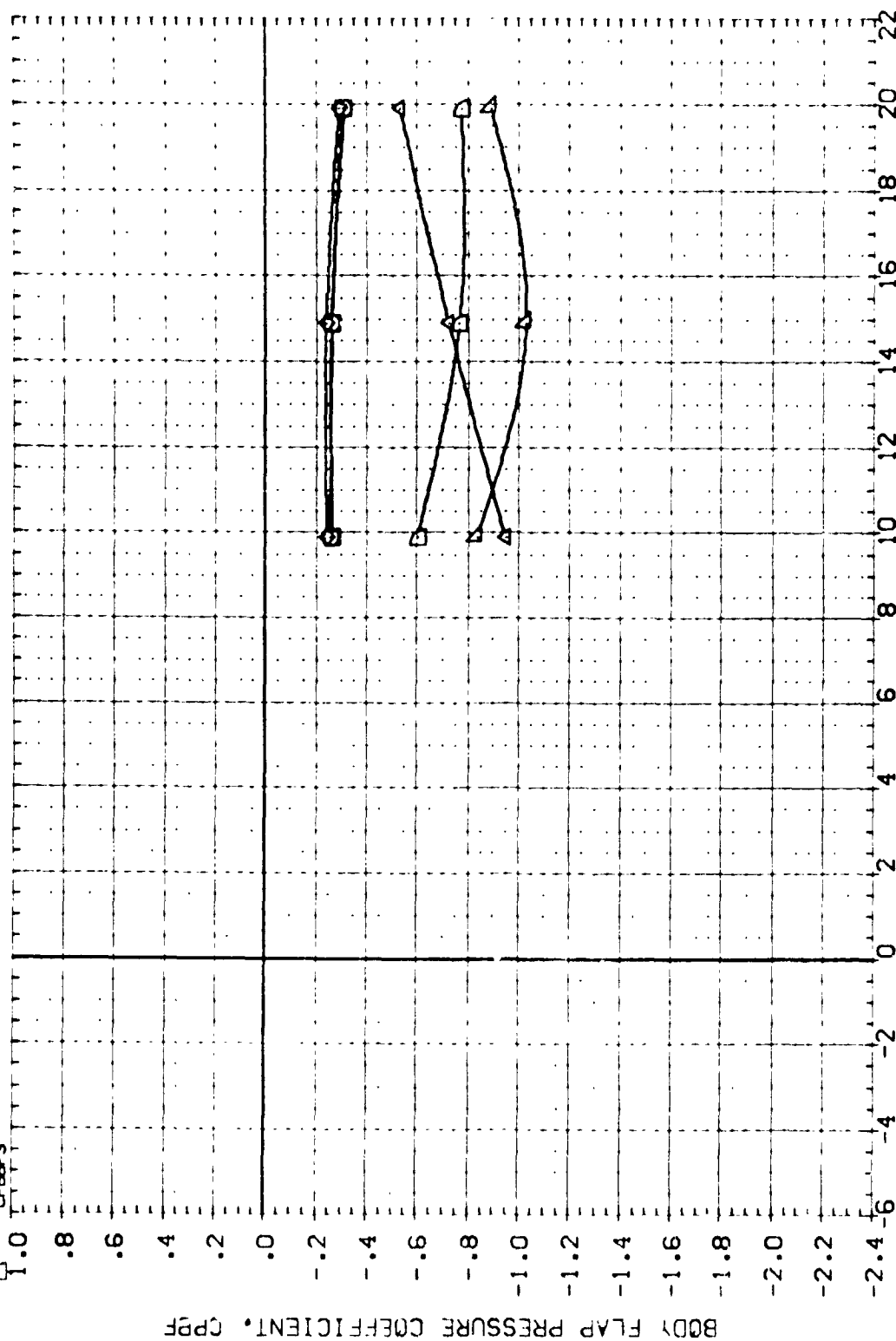


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDFLAP

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ45)

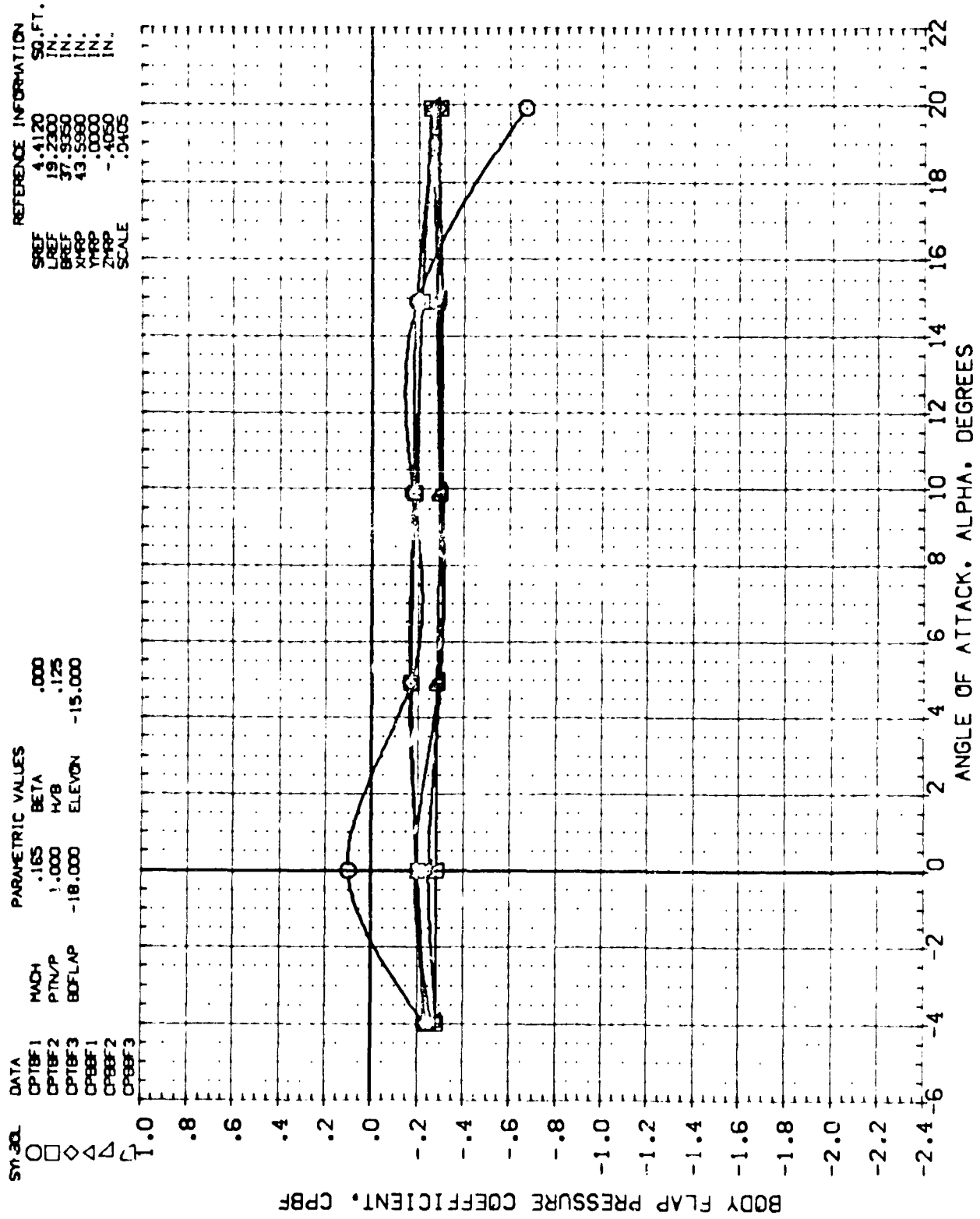


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDFLAP

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| ○ | CP1BF1 | MACH | SREF |
| ○ | CP1BF2 | PTN/P | LREF |
| ○ | CP1BF3 | BOFLAP | BREF |
| △ | CP2BF1 | BETA | XMRP |
| △ | CP2BF2 | H/B | YMRP |
| △ | CP2BF3 | ELEVON | ZMRP |
| | | | SCALE |
| | | | 50.FT. |
| | | | IN. |
| | | | IN. |
| | | | IN. |
| | | | IN. |
| | | | IN. |

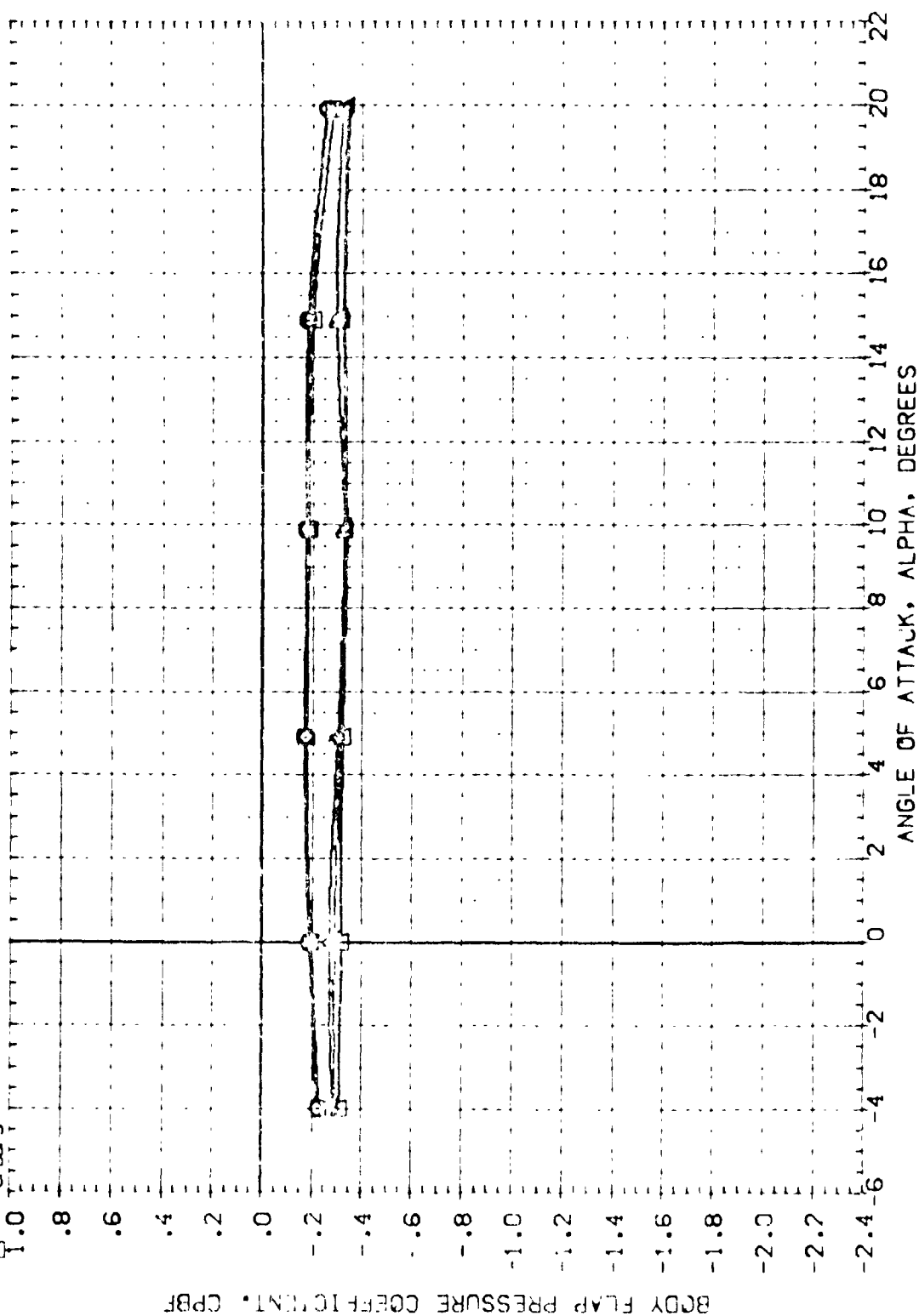


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDFLAP

0A57B (NAAL 713) 816 C5 F1 J40 W87 E18 (RDVZ43)

| | | | |
|--------|--------|-------------------|-----------------------|
| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
| ○ | CP1BF1 | MACH .165 | SREF 4.4120 SQ.FT. |
| □ | CP1BF2 | PTN/P 1.500 | LREF 19.2300 IN. |
| ◇ | CP1BF3 | BOFLAP -18.000 | BREF 37.9250 IN. |
| △ | CP8BF1 | ELEVON -15.000 | XTRP 43.5630 IN. |
| ▽ | CP8BF2 | | YTRP .0000 IN. |
| ▽ | CP8BF3 | | ZTRP -.4050 IN. |
| | | | SCALE .0405 |

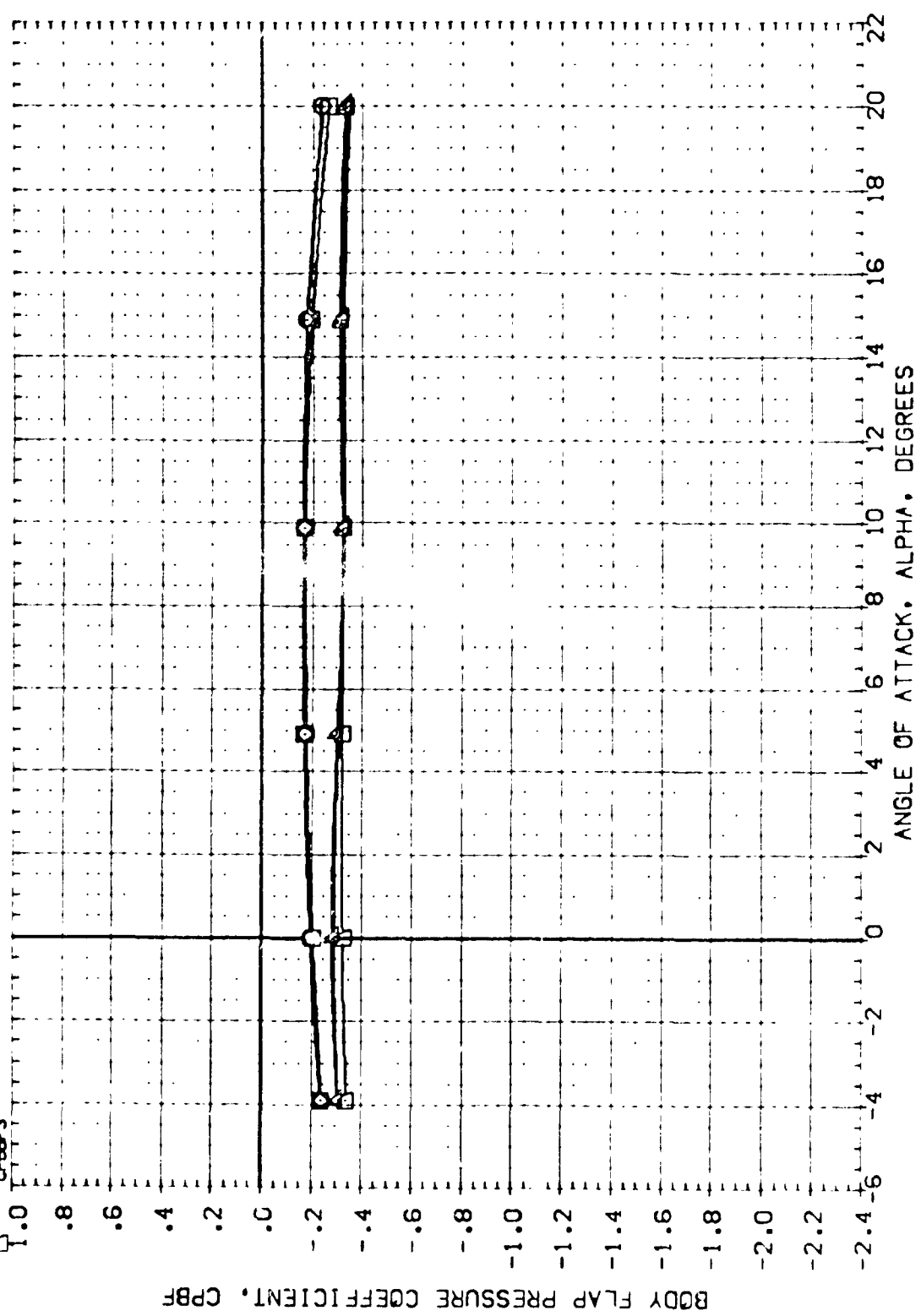


FIG. 17 BOF FLAP PRESSURE COEFFICIENTS WITH J40 , -15 ELEVON AND -18 BOFLAP

| | | | | | |
|--------|-------|-------------------|--------|-----------------------|--------|
| SYMBOL | DATA | PARAMETRIC VALUES | | REFERENCE INFORMATION | |
| □ | CPBF1 | MACH | BETA | SREF | 50.FT. |
| ◇ | CPBF2 | PTN/P | H/B | UREF | IN. |
| ◇ | CPBF3 | BOFLAP | ELEVON | BREF | IN. |
| ◇ | CPBF1 | | | XREF | IN. |
| ◇ | CPBF2 | | | YREF | IN. |
| ◇ | CPBF3 | | | ZREF | IN. |
| | | | | SCALE | |

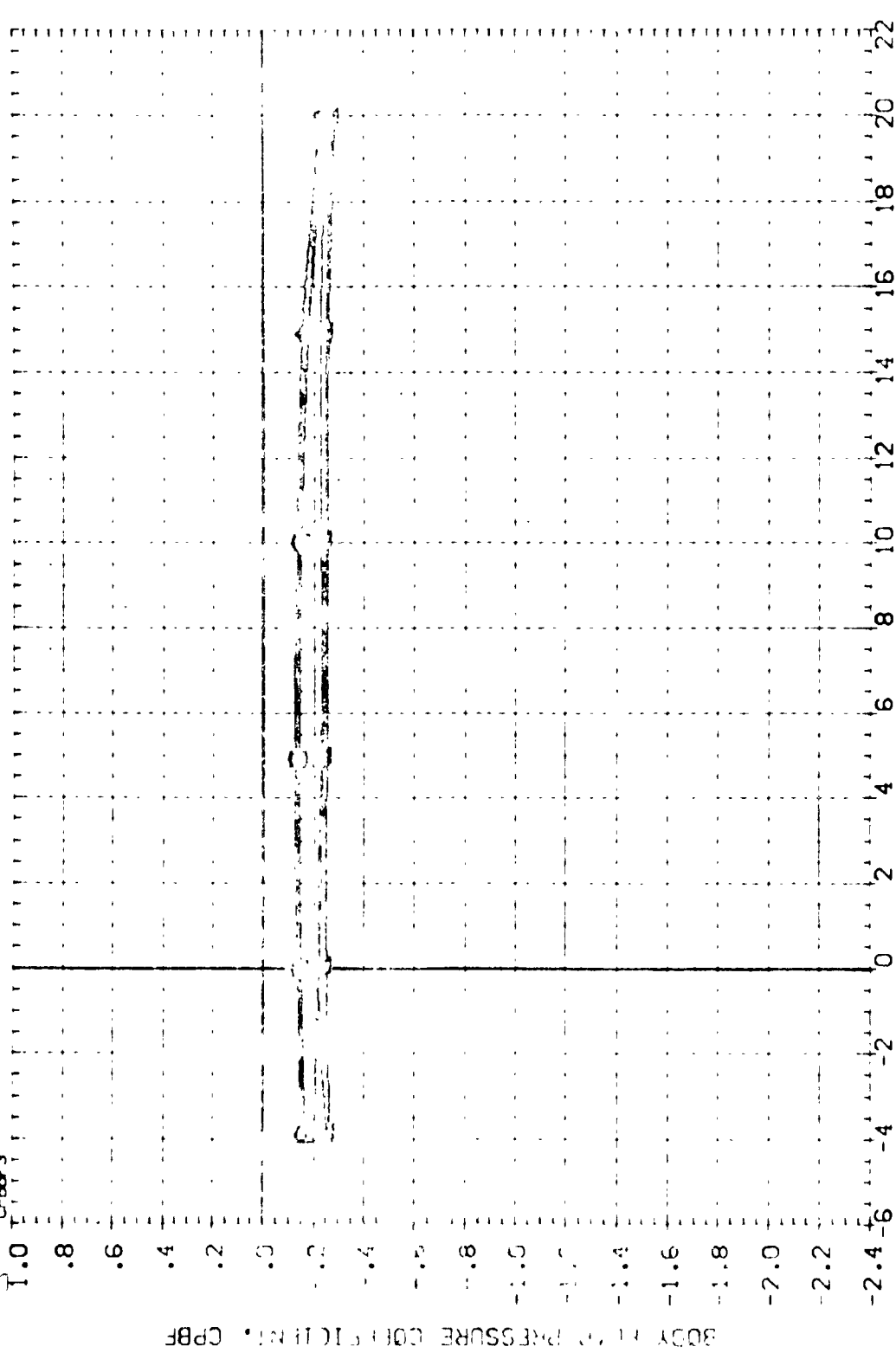


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40 , -15 ELEVON AND -18 BOFLAP

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ38)

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| □ | CP1BF1 | MAC1 | SREF 4.4120 SQ.FT. |
| □ | CP1BF2 | PTN/P | LREF 19.2300 IN. |
| □ | CP1BF3 | WOF LAP | EREF 37.9350 IN. |
| △ | CP2BF1 | BETA | XREF 43.5980 IN. |
| △ | CP2BF2 | M/B | YREF .0000 IN. |
| △ | CP2BF3 | ELEV | ZREF -.4050 IN. |
| | | | SCALE .0405 |

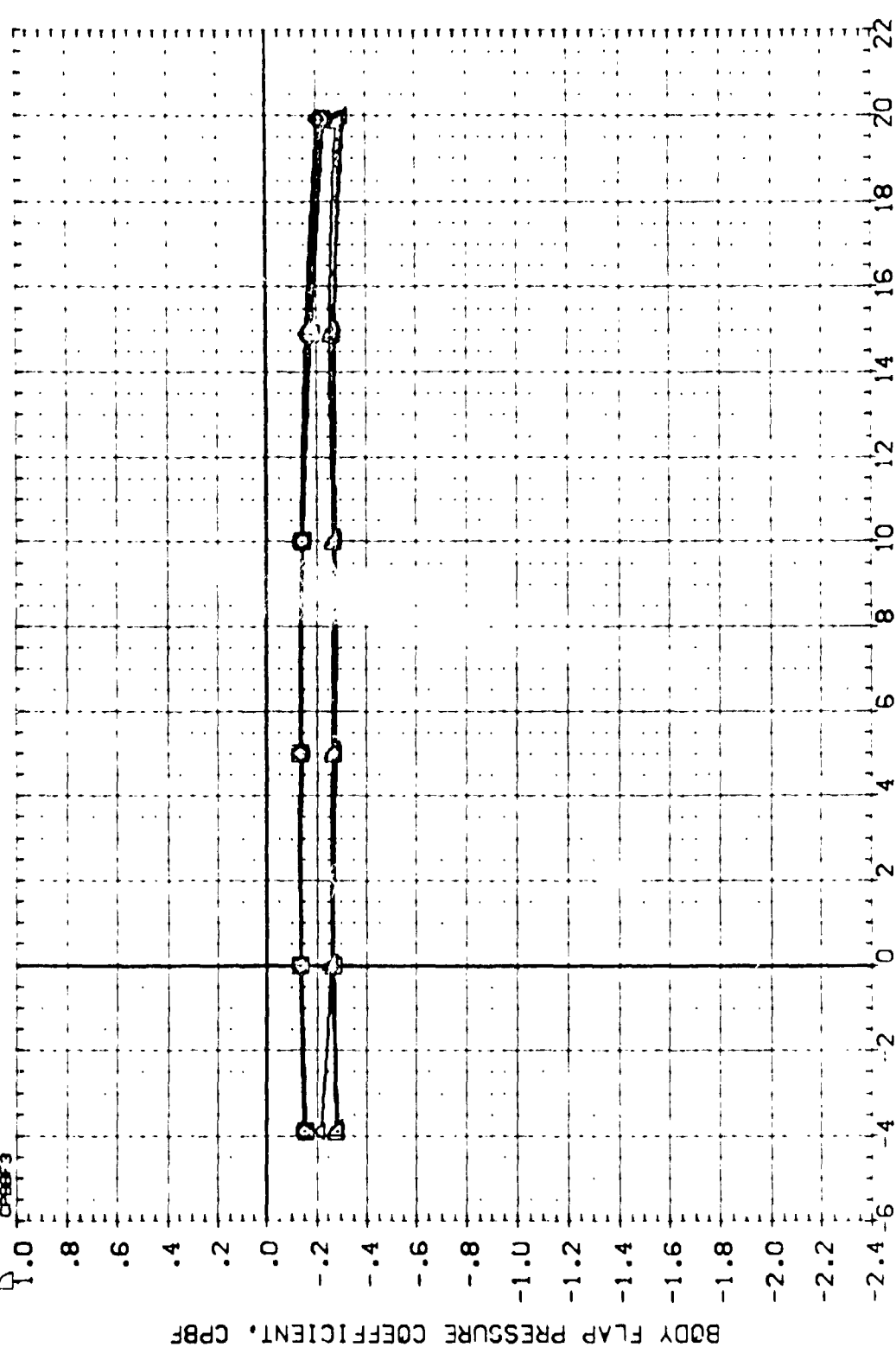


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDFLAP

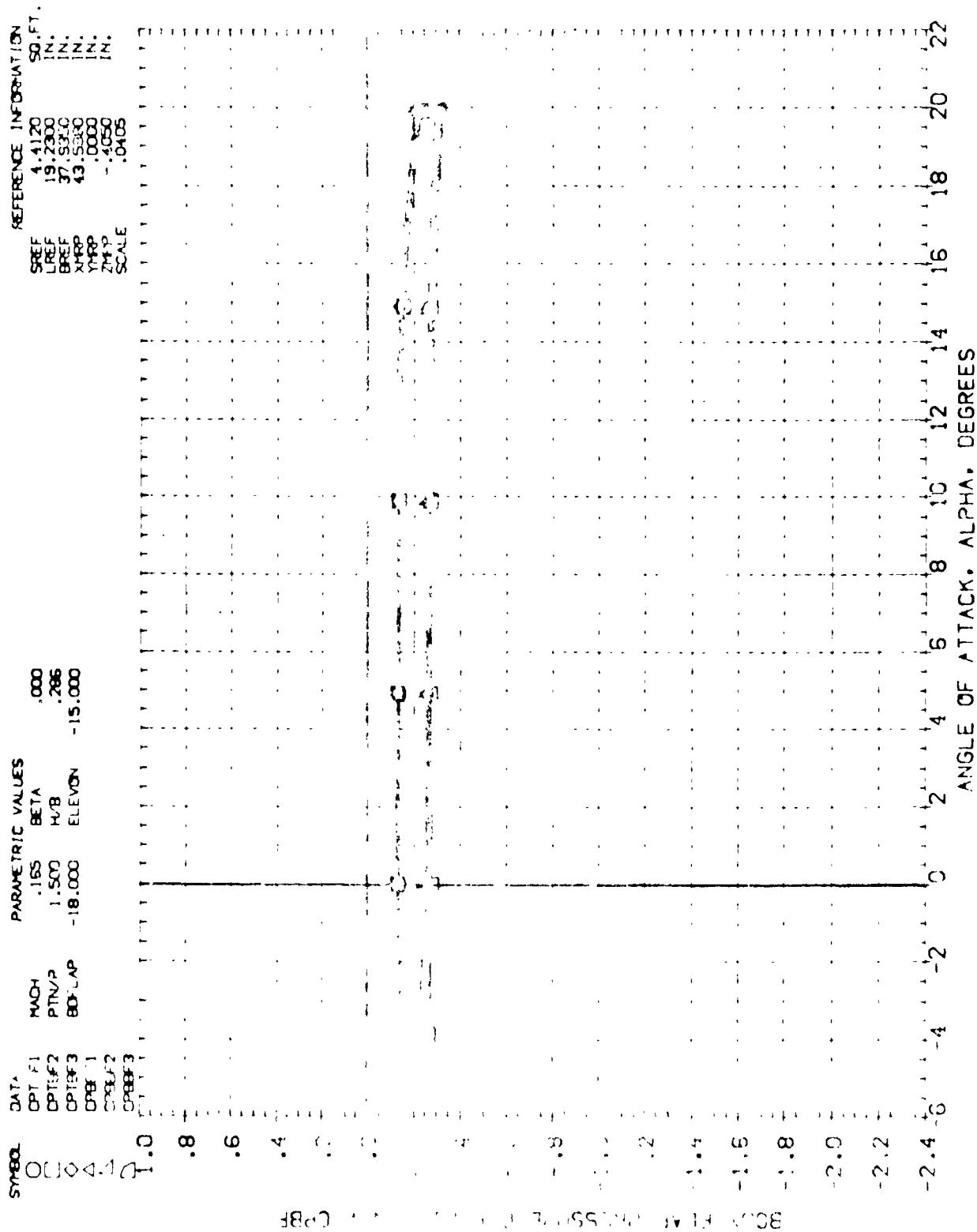


FIG. 17 BODY FLAP PRESSURE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BDCLAP

0A578 (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ03)

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| ○ | OPTBF1 | MACH | SREF |
| □ | OPTBF2 | .165 BETA | LREF |
| ◇ | OPTBF3 | 1.000 M/B | BREF |
| △ | OPTBF1 | -18.000 ELEVON | XREF |
| ▽ | OPTBF2 | | YREF |
| ▽ | OPTBF3 | | ZREF |
| | | | SCALE |
| | | | .0405 |

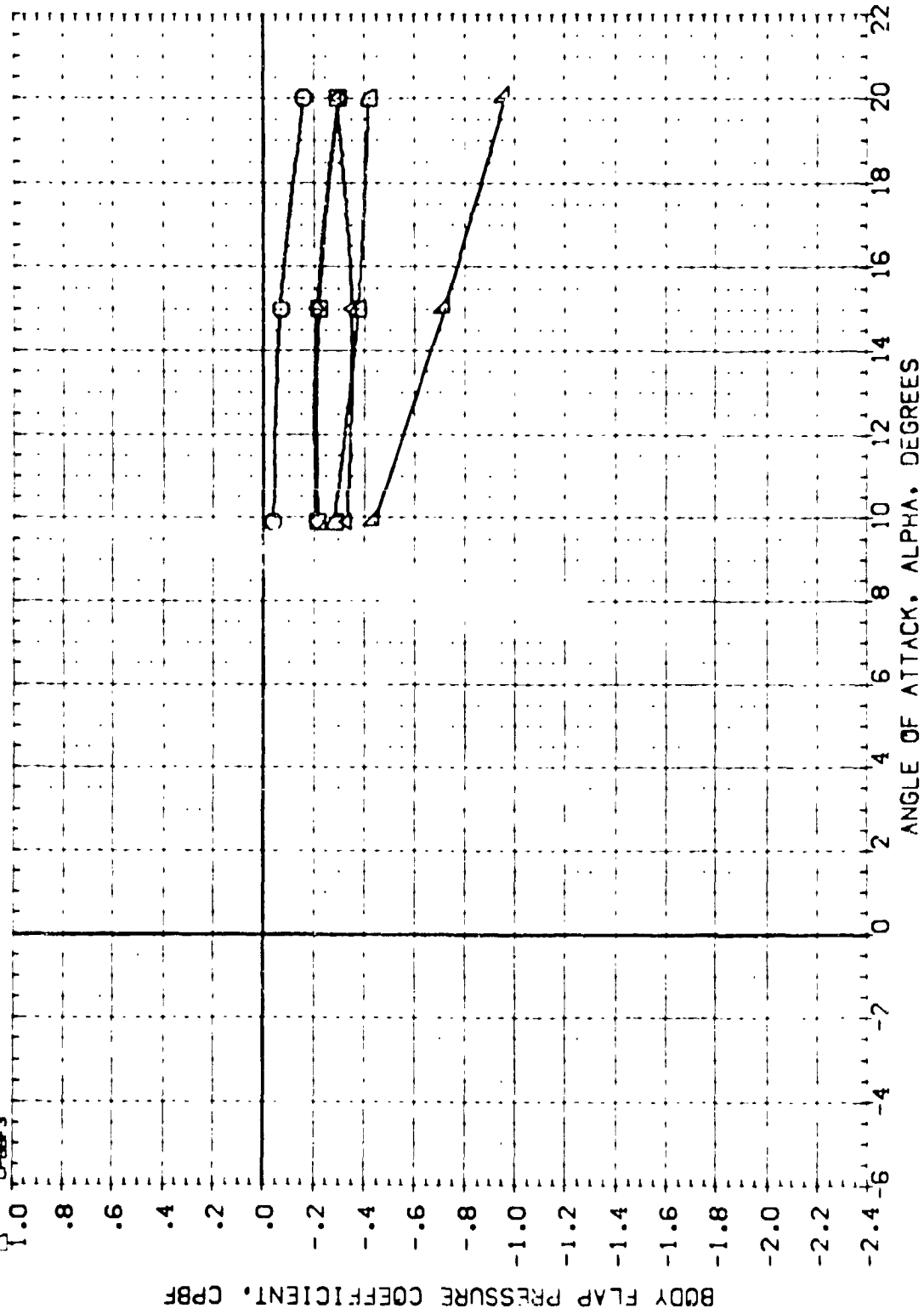


FIG. 18 BC AP PRESSURE COEFFICIENTS WITH J4C . 0 ELEVON AND -18 BDFLAP

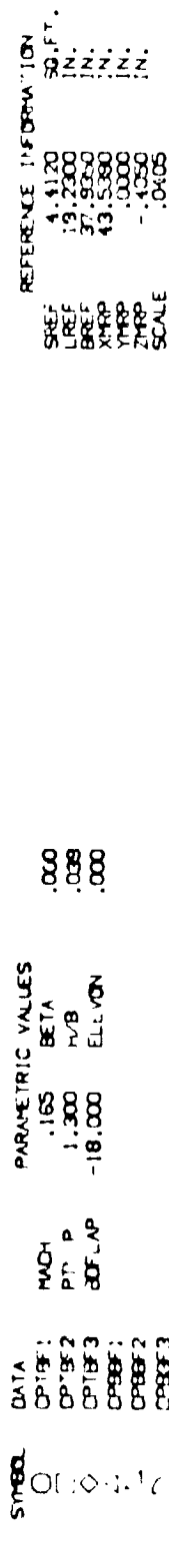


FIG. 18 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BCFLAP

0A578 (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ05)

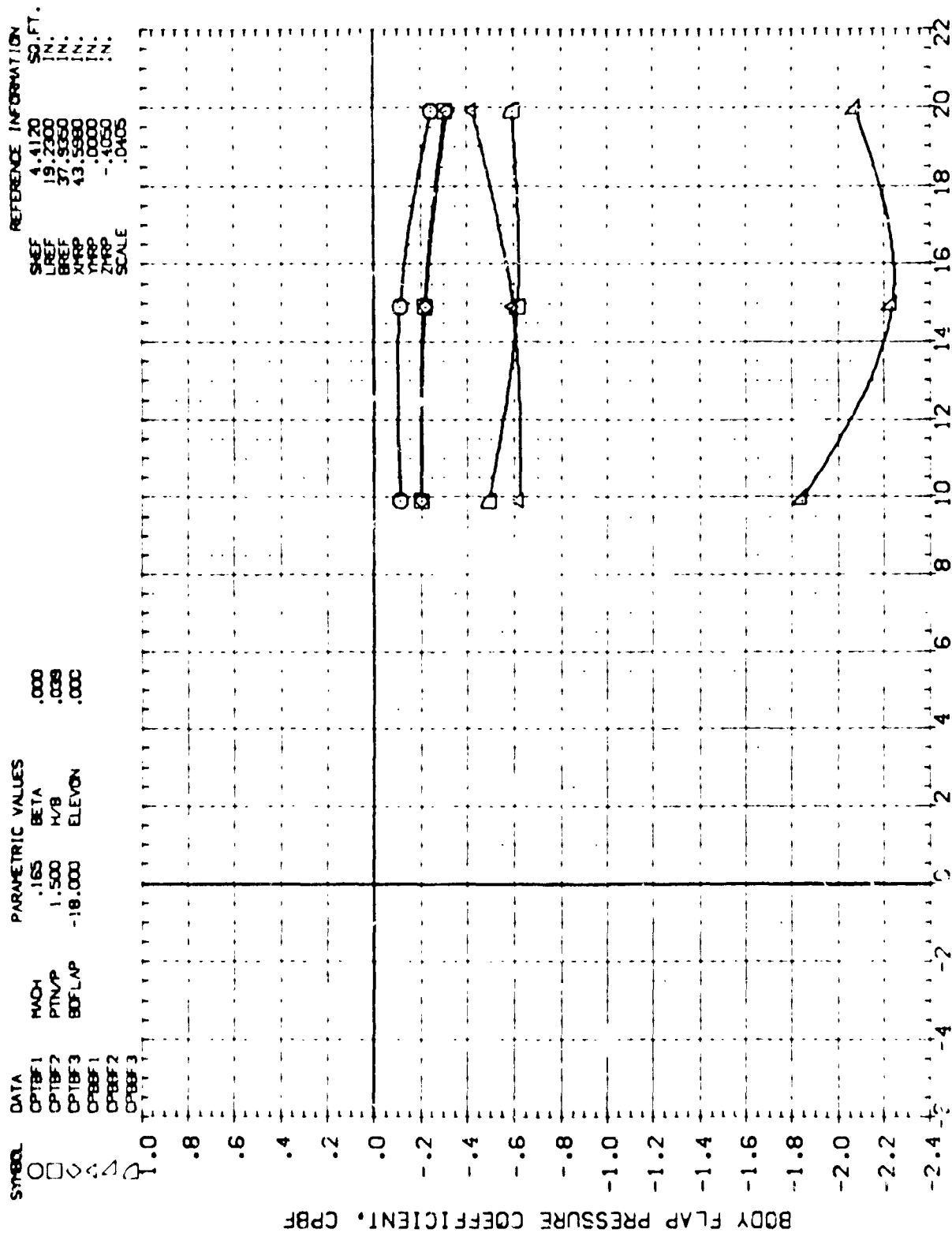


FIG. 18 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP

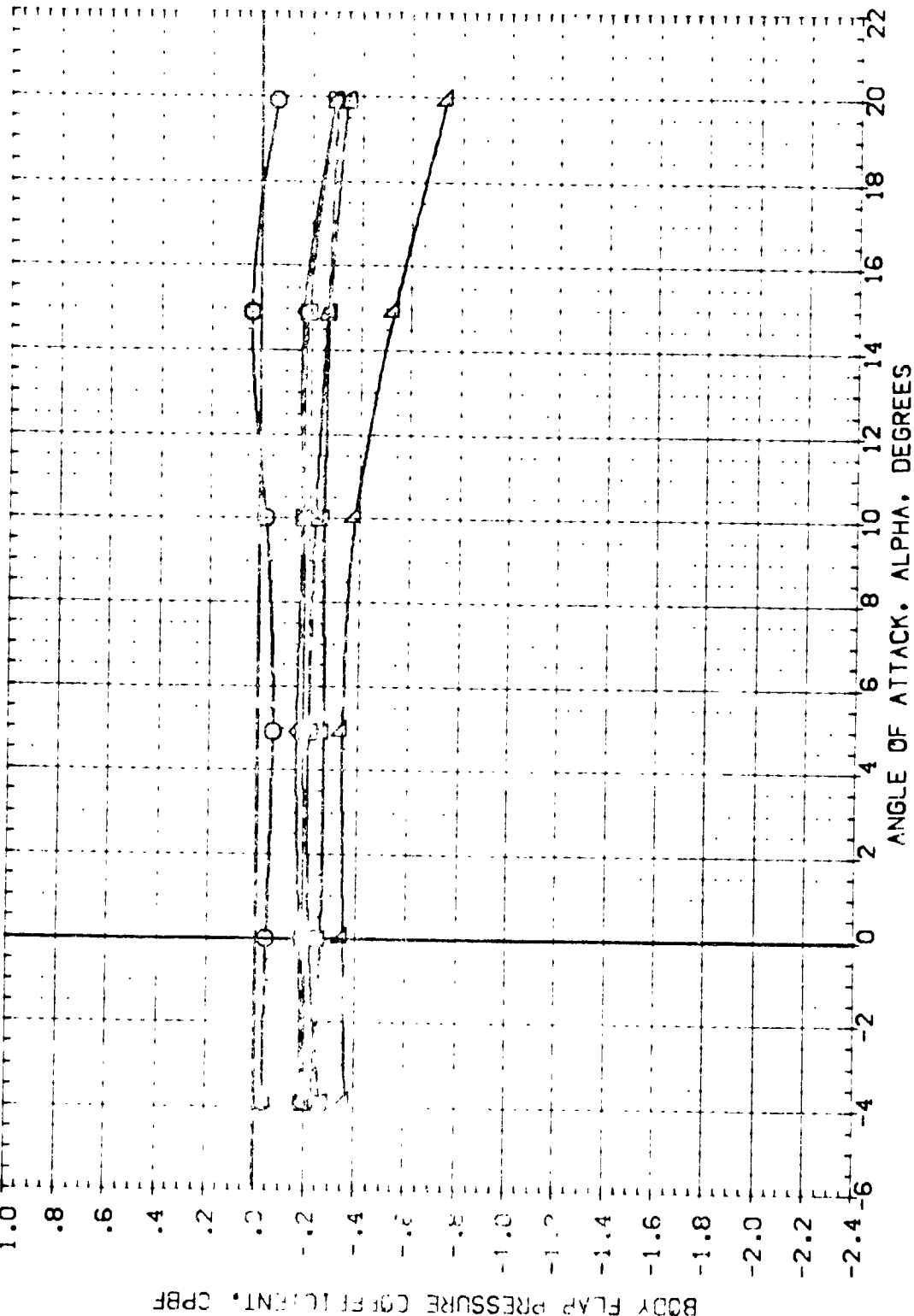


FIG. 18 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP

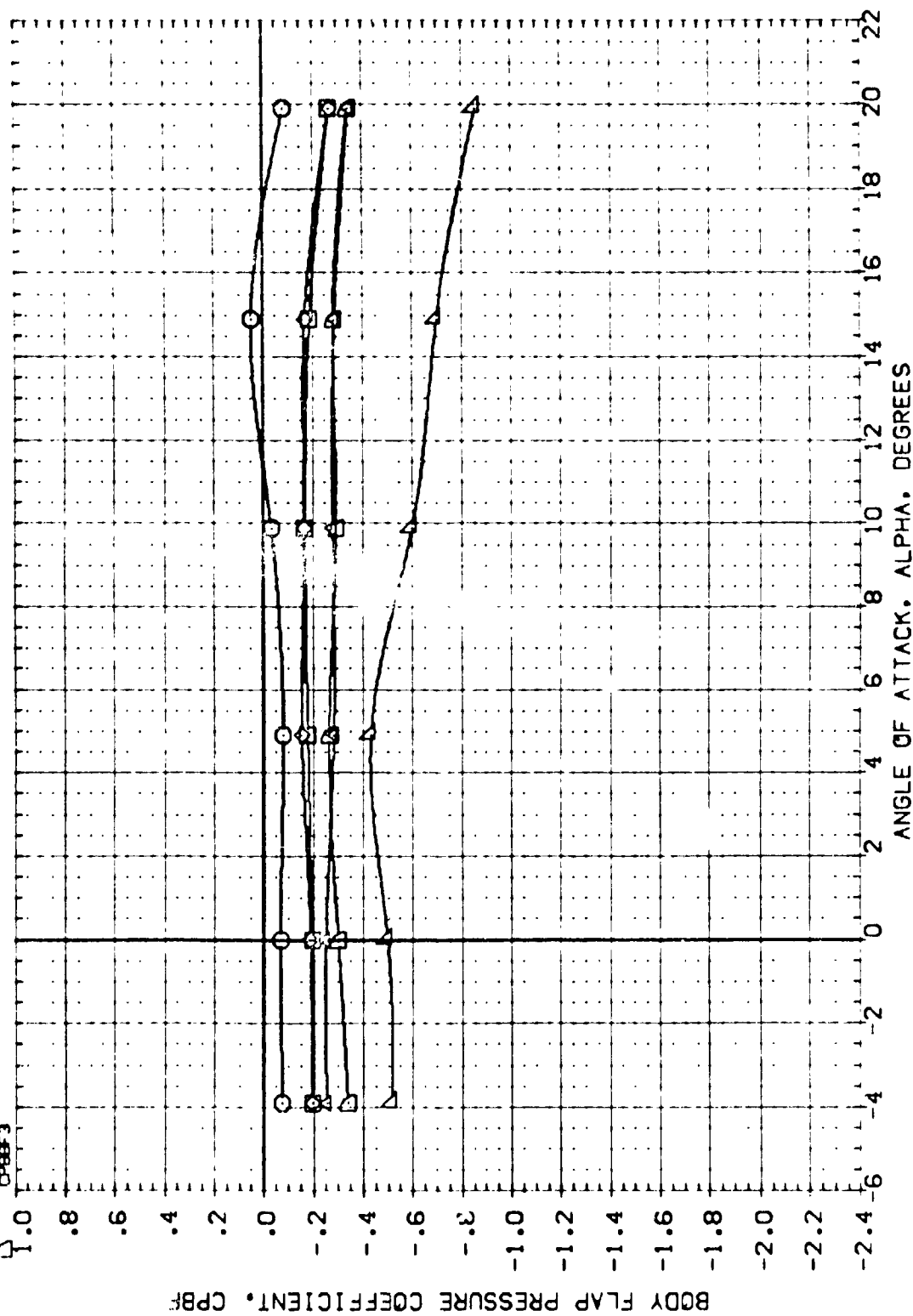
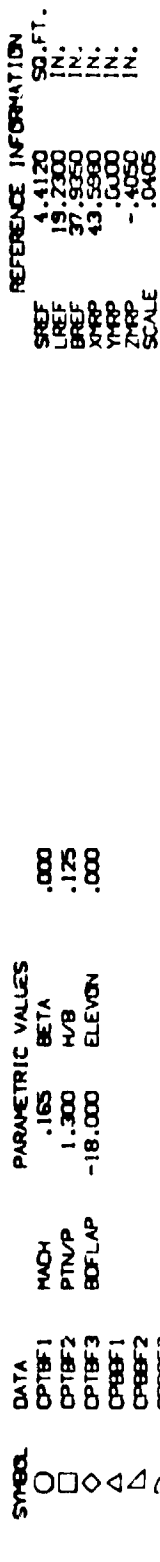


FIG. 18 80° FLAP PRESSURE COEFFICIENTS WITH J40 , 0 ELEVON AND -18 BDFLAP

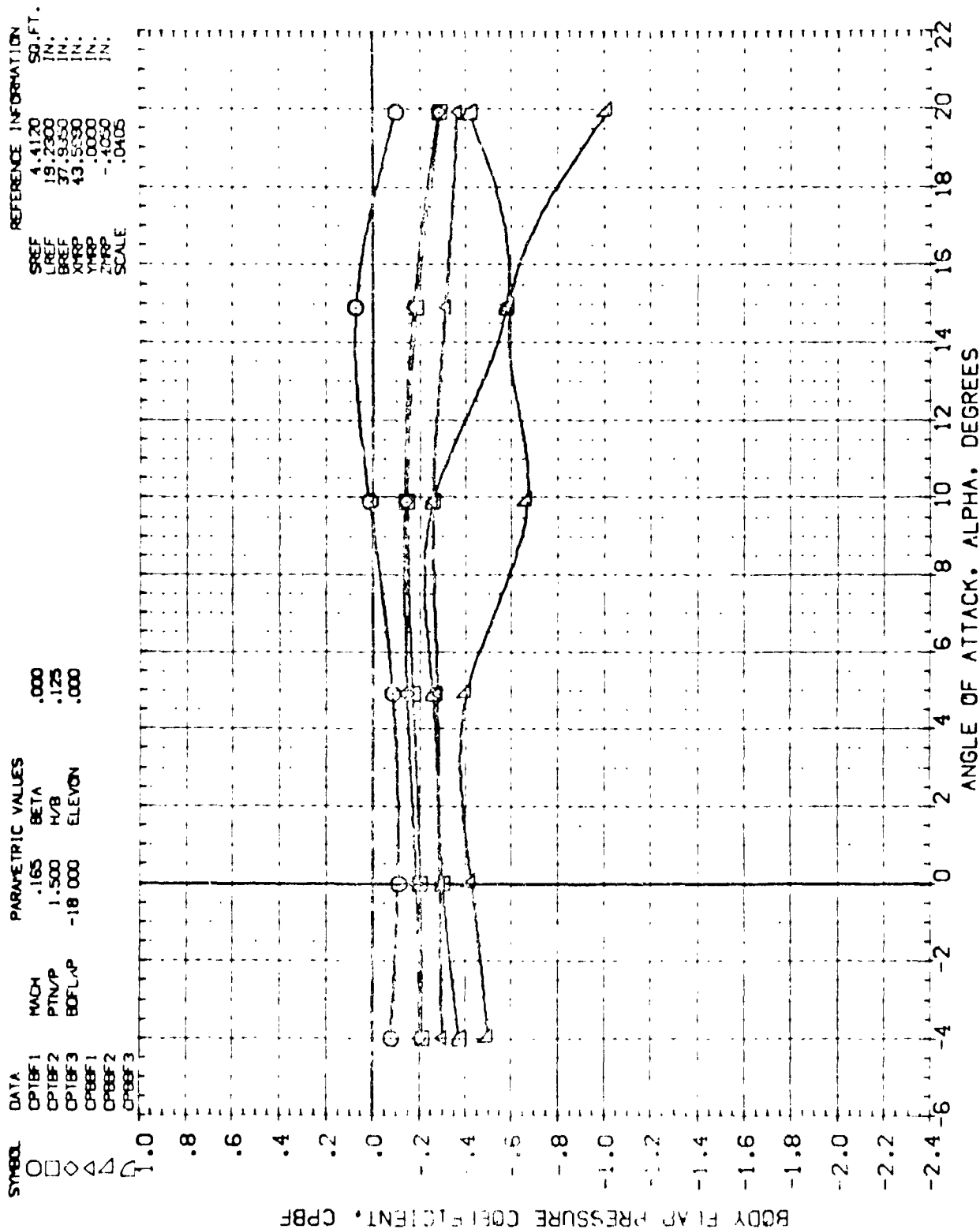


FIG. 18 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP

0A578 (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ15)

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| ○ | OPTBF1 | MACH | SREF 4.4120 |
| □ | OPTBF2 | BETA | LREF 19.2300 |
| ◇ | OPTBF3 | H/B | BREF 37.9350 |
| △ | CPBF1 | ELEVON | XREF 43.5300 |
| ▽ | CPBF2 | | YREF 0.0000 |
| ▽ | CPBF3 | | ZREF -0.4050 |
| | | | SCALE .0405 |

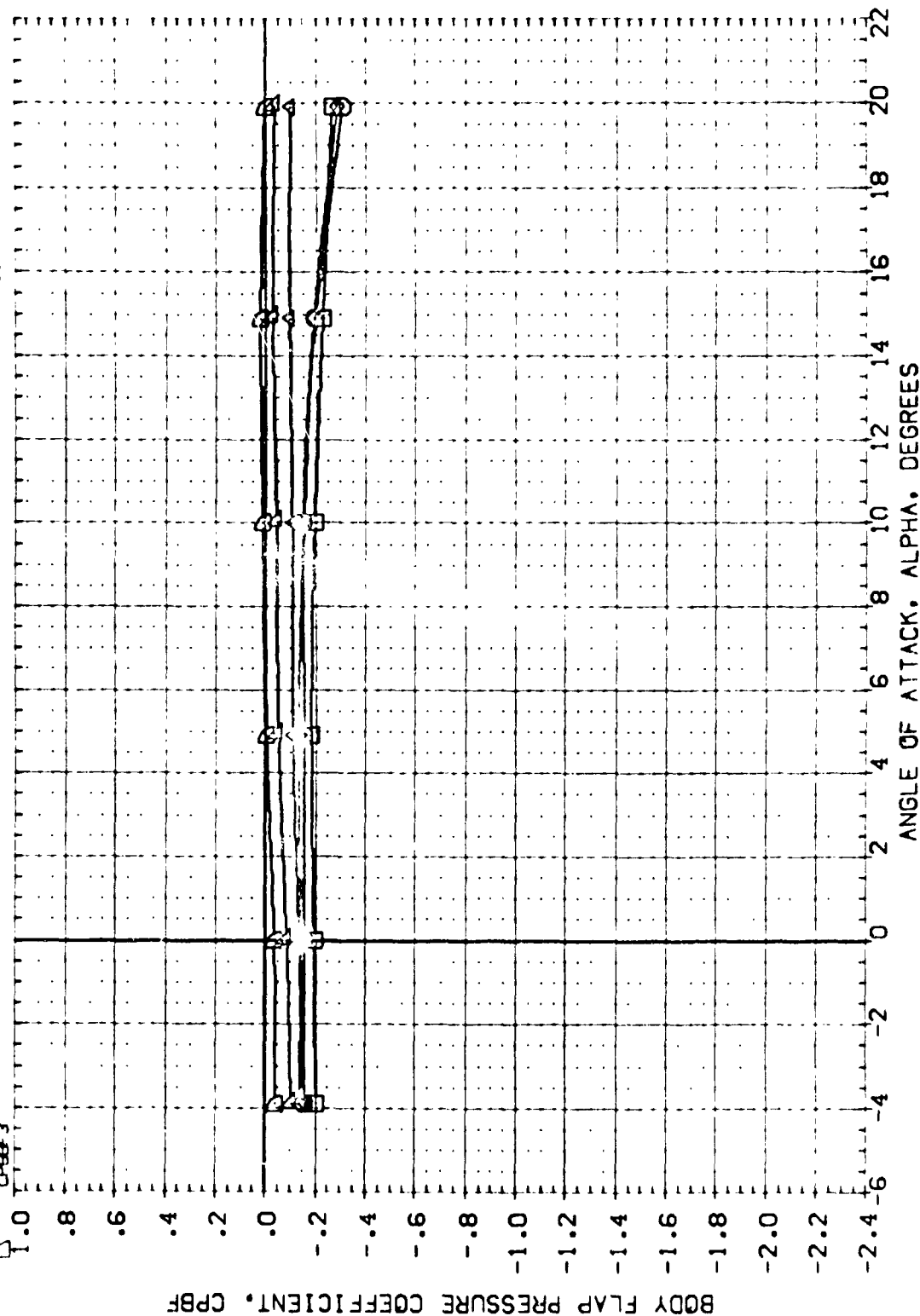


FIG. 18 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP

| SYMBOL | DATA | MACH | PAR/METRIC VALUES | REFERENCE INFORMATION |
|--------|--------|--------|-------------------|-----------------------|
| ○ | CPTBF1 | PTN/P | .165 BETA | SREF 4.4120 SQ.FT. |
| □ | CPTBF2 | BOFLAP | 1.300 H/V | LREF 19.2300 IN. |
| ◇ | CPTBF3 | | -18.000 ELEVON | BREF 37.9300 IN. |
| △ | CPBBF1 | | | XMRP 43.5030 IN. |
| ▽ | CPBBF2 | | | YMRP .0000 IN. |
| ▽ | CPBBF3 | | | ZMRP -.4050 IN. |
| | | | | SCALE .0405 |

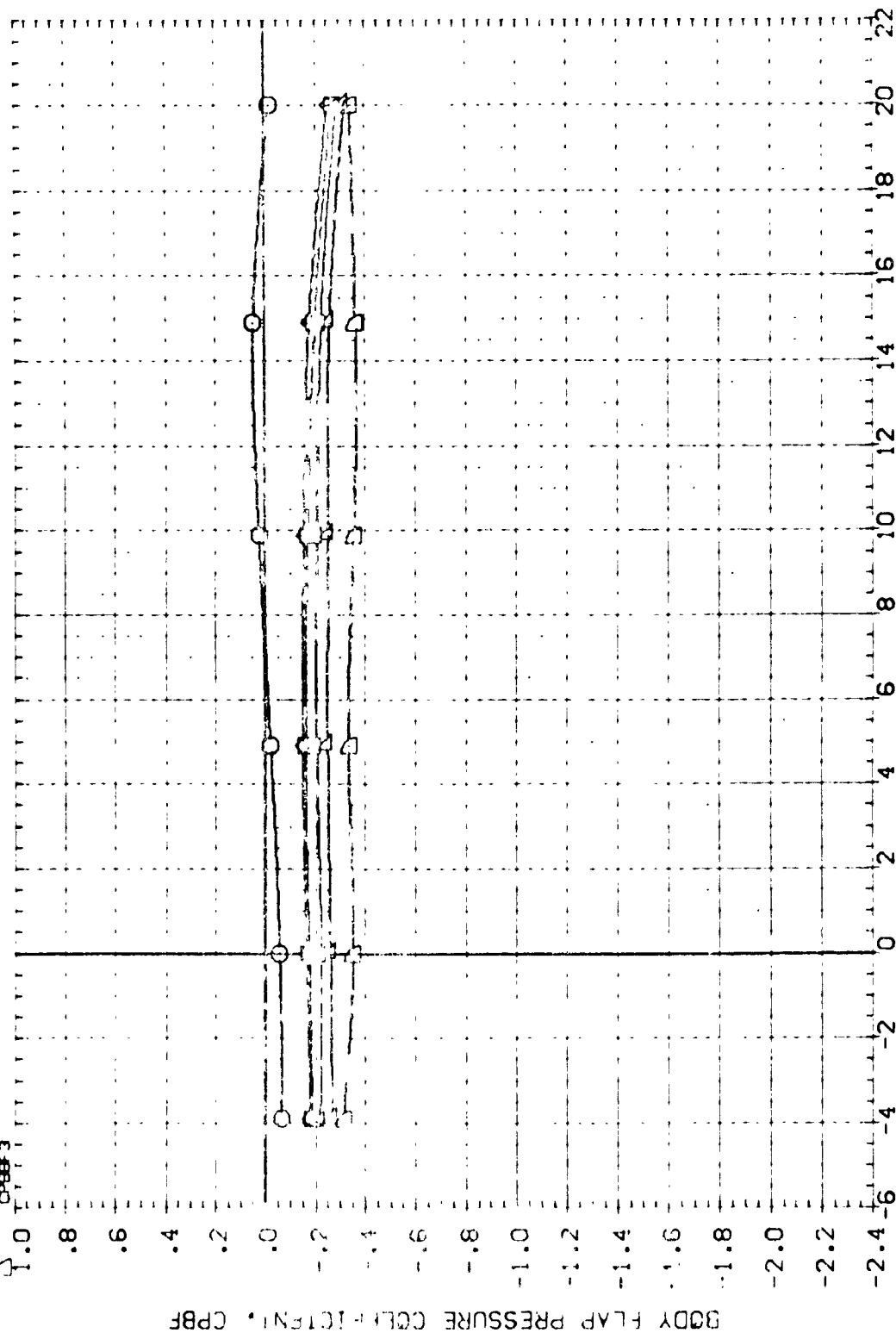


FIG. 18 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BOFLAP

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| ○ | CPBFF1 | MACH | SREF |
| □ | CPBFF2 | PTN/P | LREF |
| ◇ | CPBFF3 | BDFLAP | BREF |
| ▽ | CPBFF1 | W/B | XREF |
| △ | CPBFF2 | ELEVON | YREF |
| ▽ | CPBFF3 | | ZREF |
| | | | SCALE |
| | | | 4.4120 SQ.FT. |
| | | | 19.2300 IN. |
| | | | 37.9350 IN. |
| | | | 43.5980 IN. |
| | | | .0000 IN. |
| | | | -.0050 IN. |
| | | | .0405 |

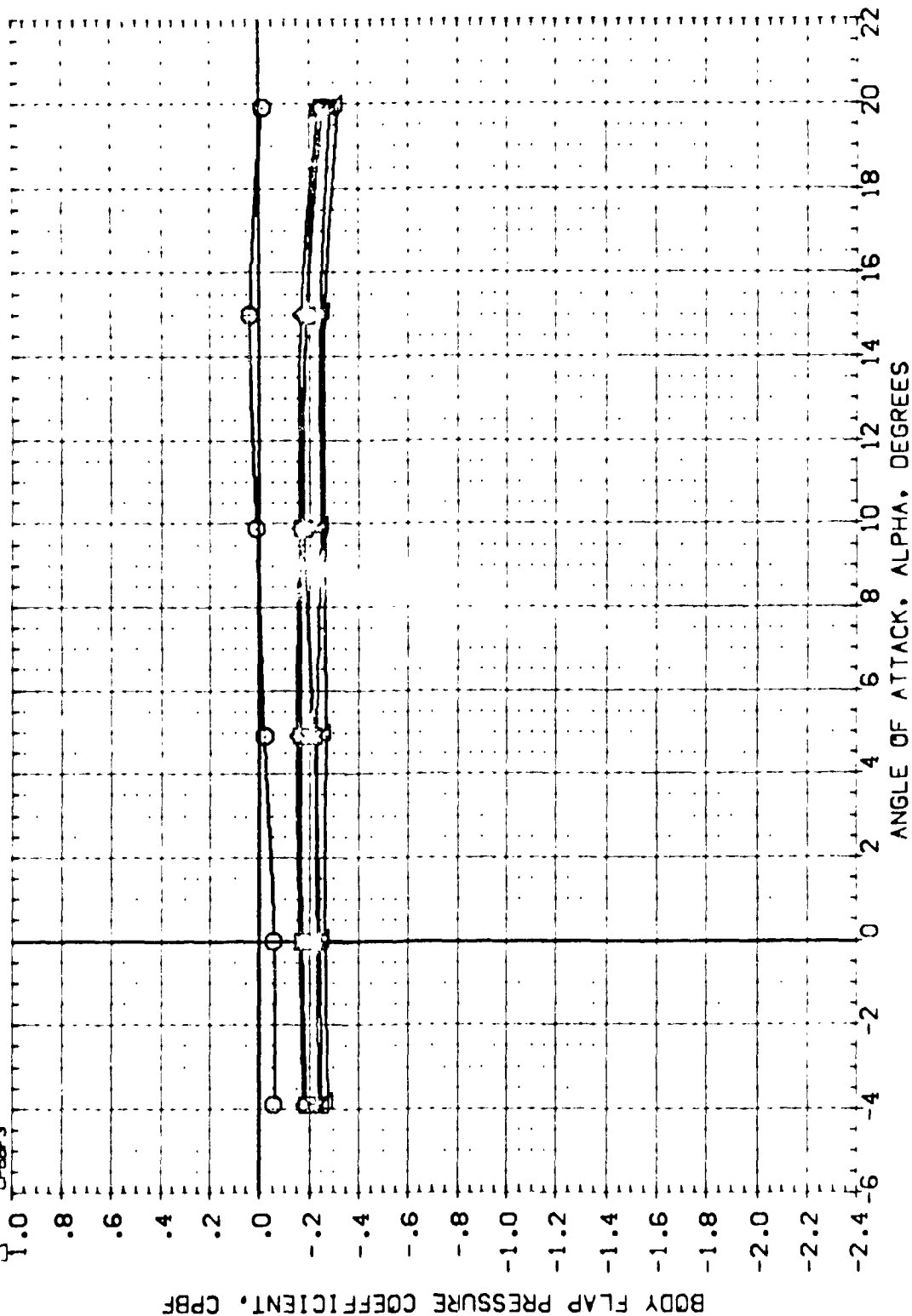


FIG. 18 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP

0A57R (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ11)

| | | | |
|--------|-------|-------------------|-----------------------|
| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
| □ | CPBF1 | MACH | SREF 4.4120 SQ.FT. |
| □ | CPBF2 | PTN/VP | LREF 19.7300 IN. |
| □ | CPBF3 | BDFLAP | BREF 37.9300 IN. |
| □ | CPBF1 | BETA | XMRP 43.5000 IN. |
| □ | CPBF2 | M/R | YMRP .0000 IN. |
| □ | CPBF3 | ELEVON | ZMRP -1.0550 IN. |
| | | | SCALE .0405 |

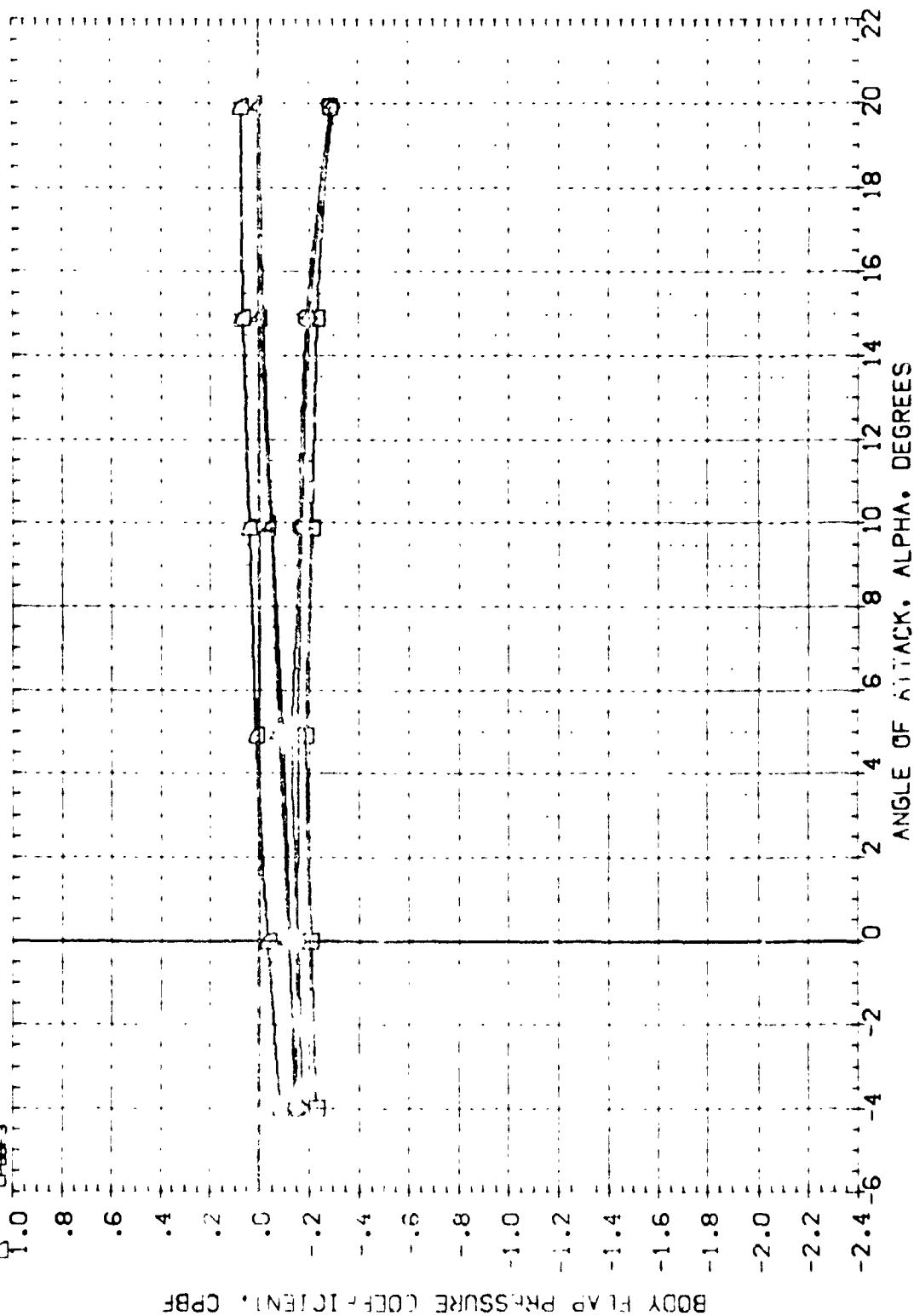


FIG. 19 BODY FLAP PRESSURE COEFFICIENTS WITH J40 . 0 ELEVON AND 0 BDFLAP

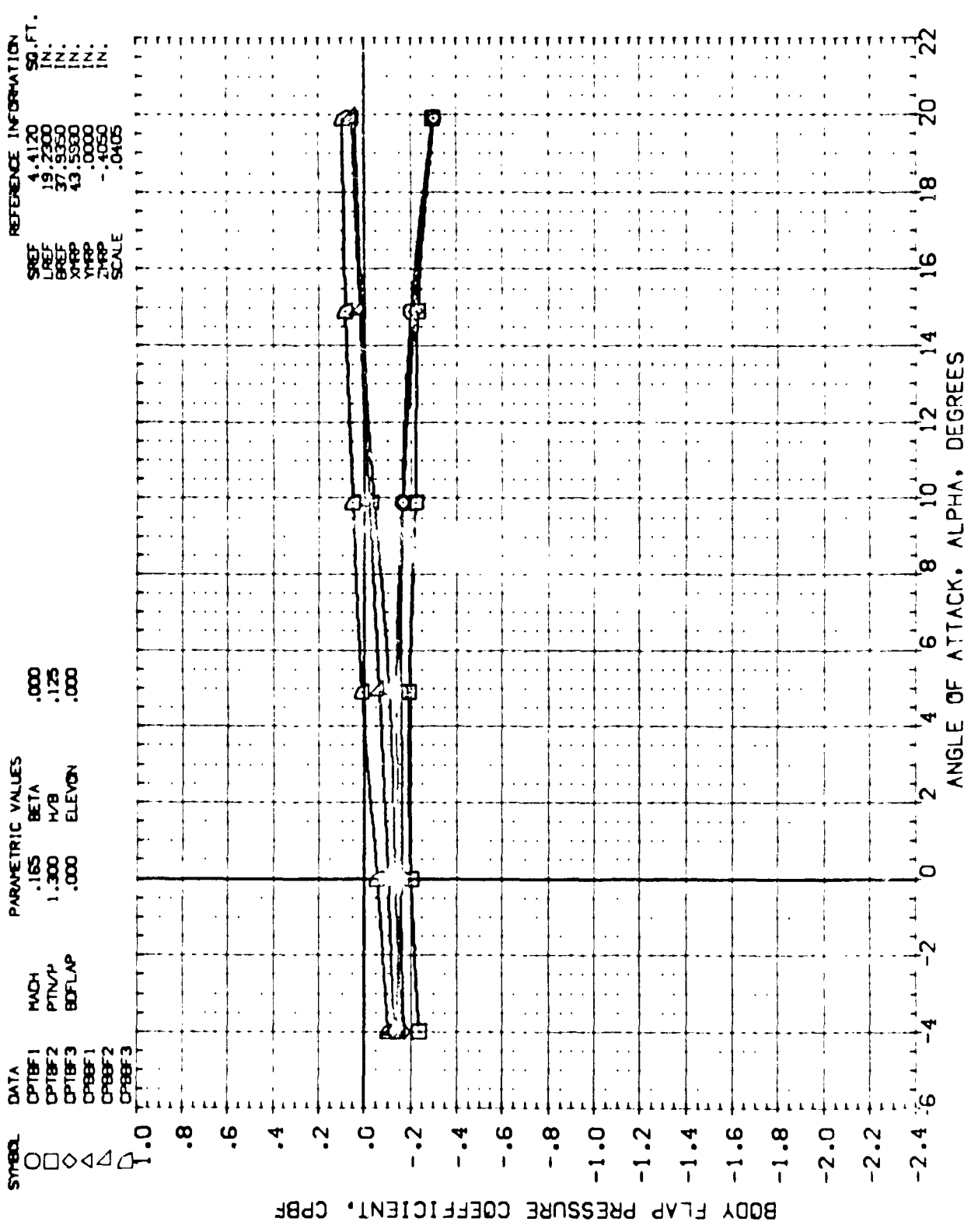


FIG. 19 BODY FLAP PRESSURE COEFFICIENTS WITH J40 , 0 ELEVON AND 0 BDFLAP

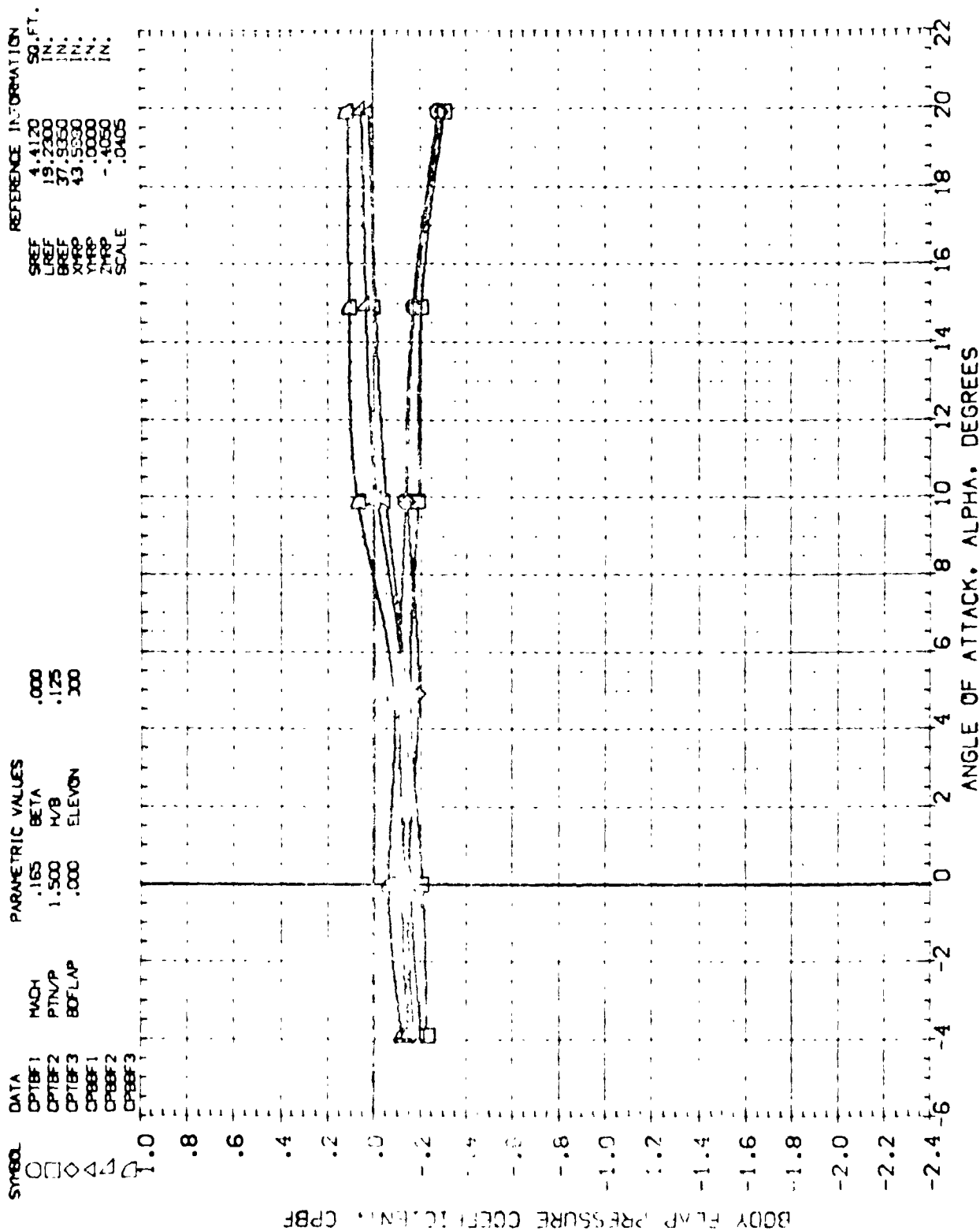


FIG. 19 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND 0 BOFLAP

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ13)

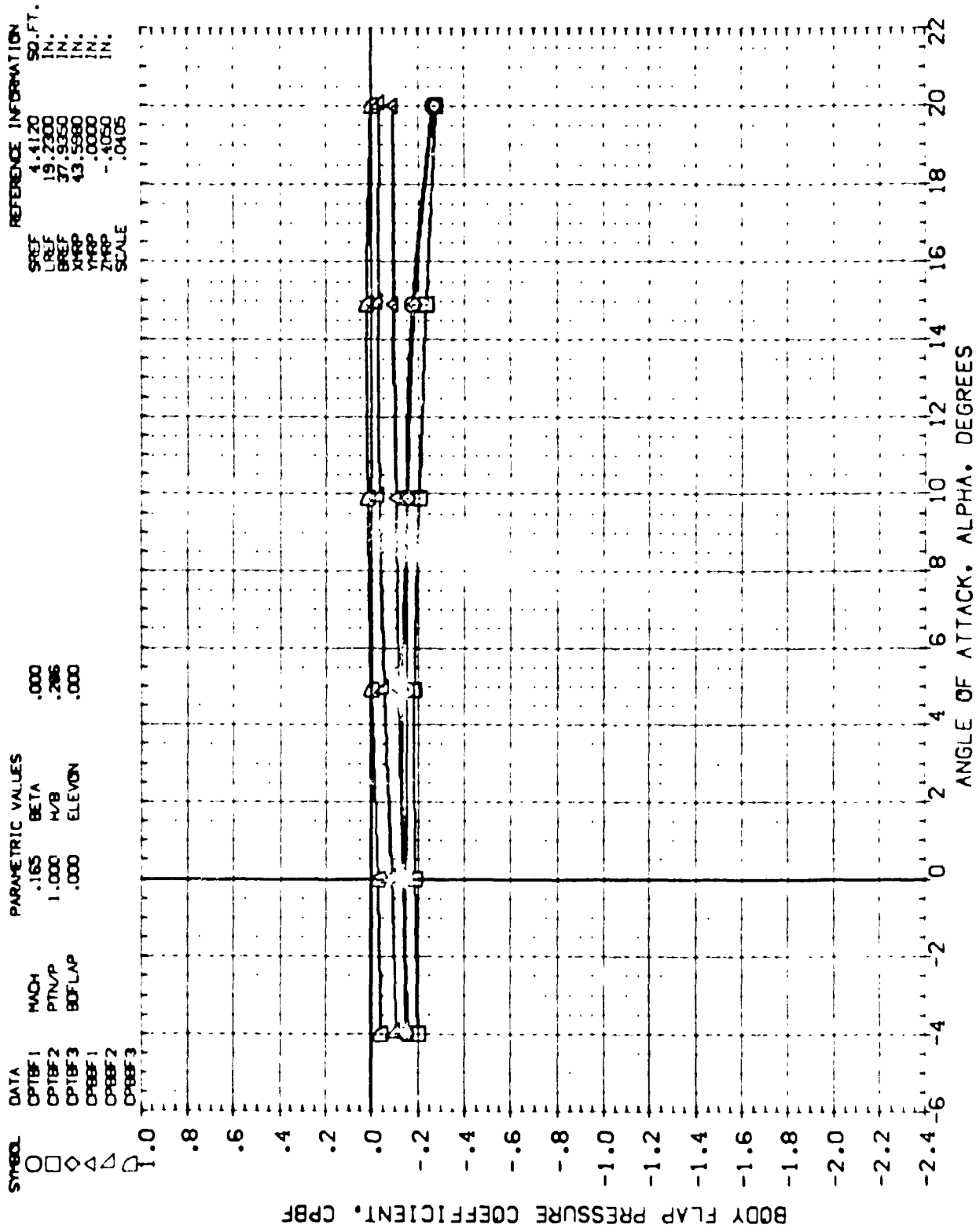


FIG. 19 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND 0 BOFLAP

0A578 (NAAL 713) 816 C5 F' J40 W87 E18 (RDVZ14)

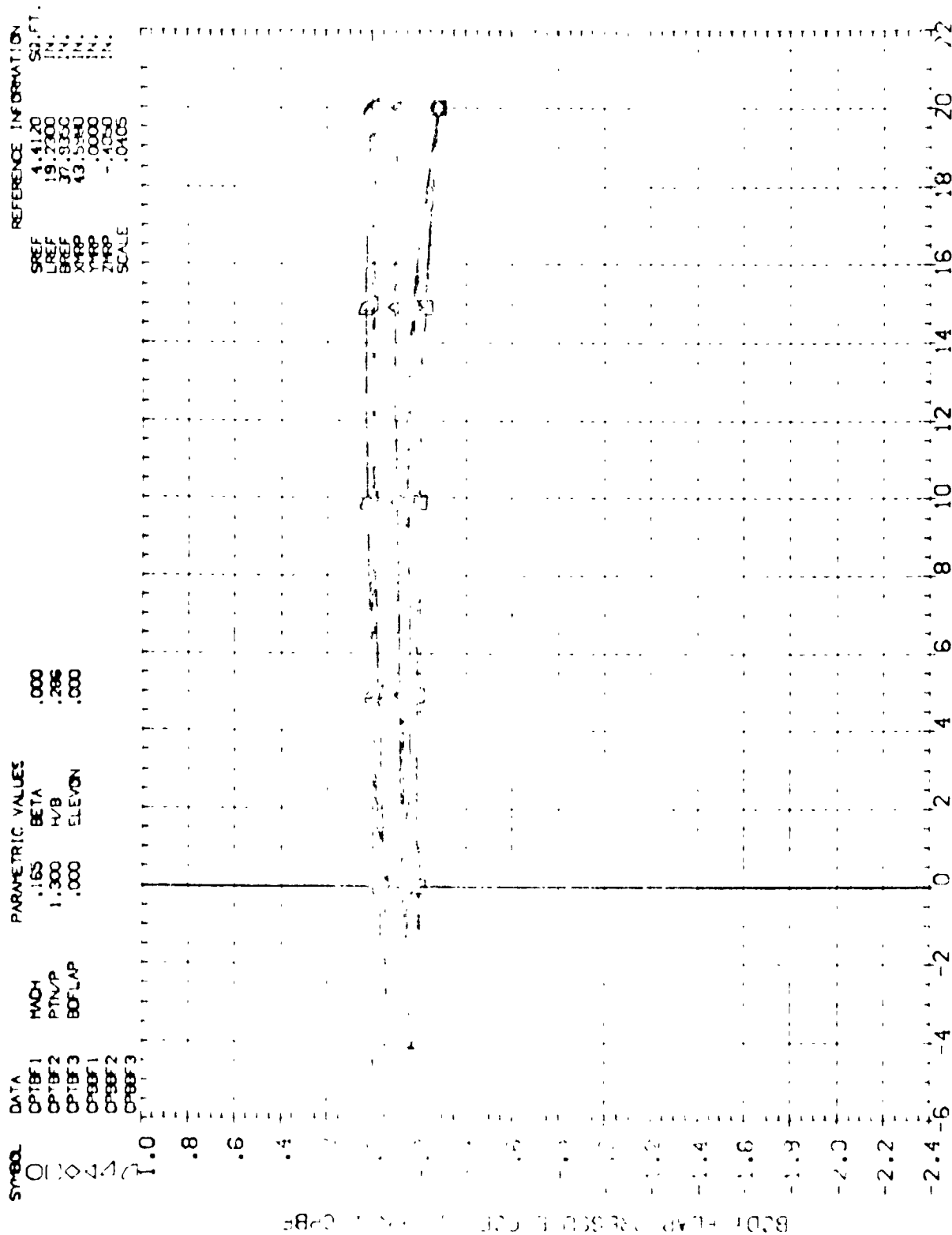


FIG. 19 BOFLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON

0A578 NAAL 713) 816 C5 F1 J40 W87 E18 (ROVZ12)

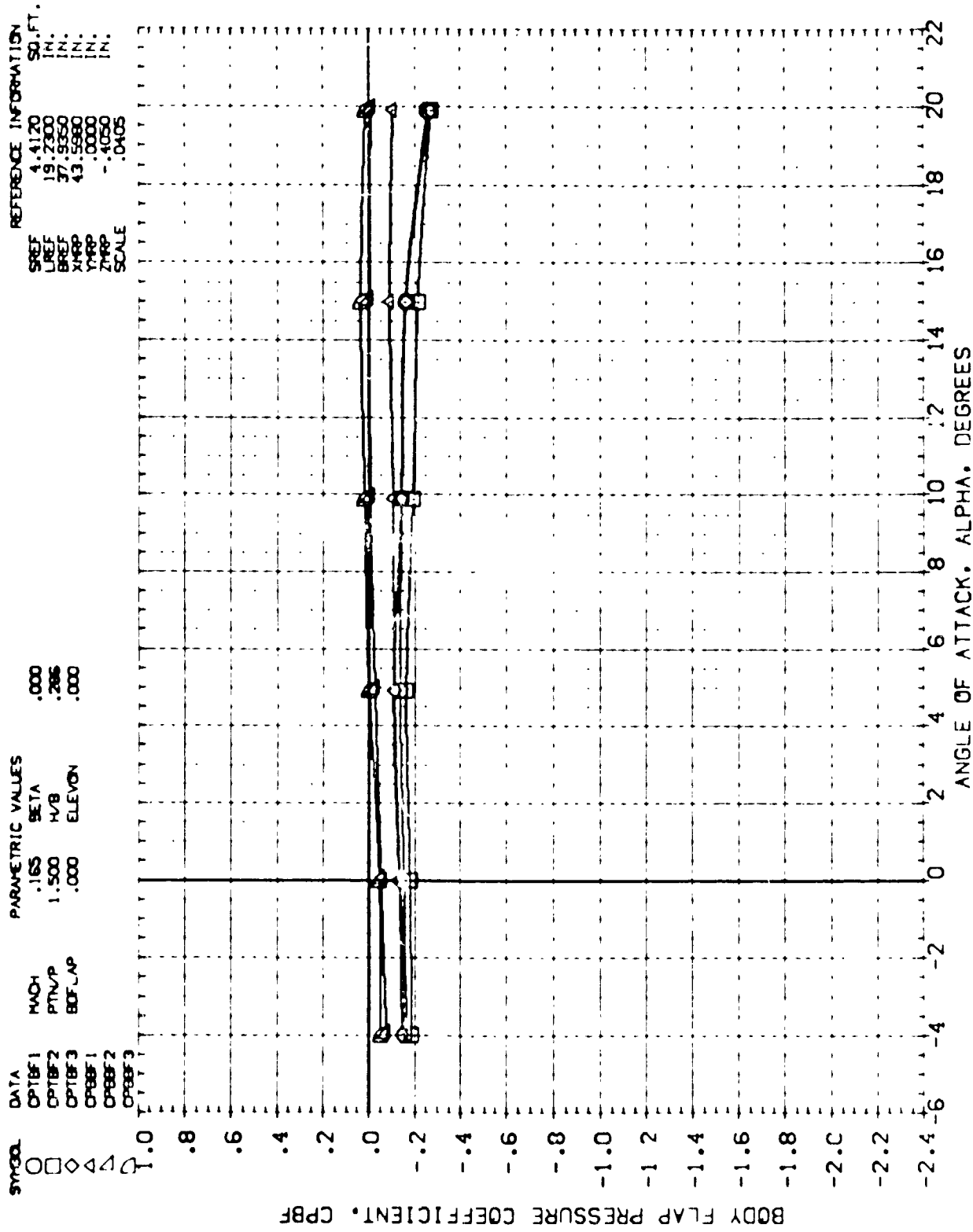


FIG. 19 80° FLAP PRESSURE COEFFICIENTS WITH J4C, 0 ELEVON AND 0 BOFLAP

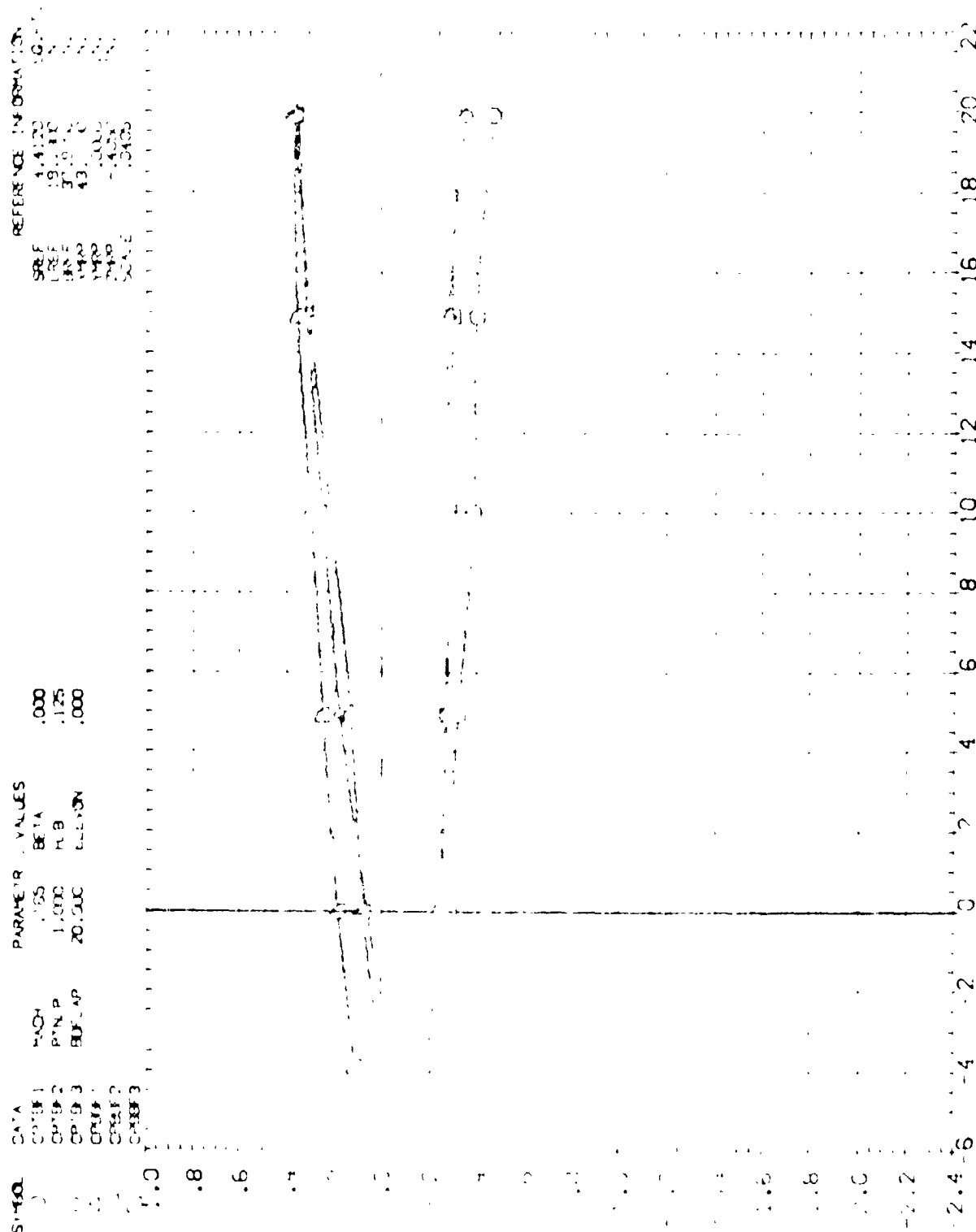


FIG. 20 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BOFLAP

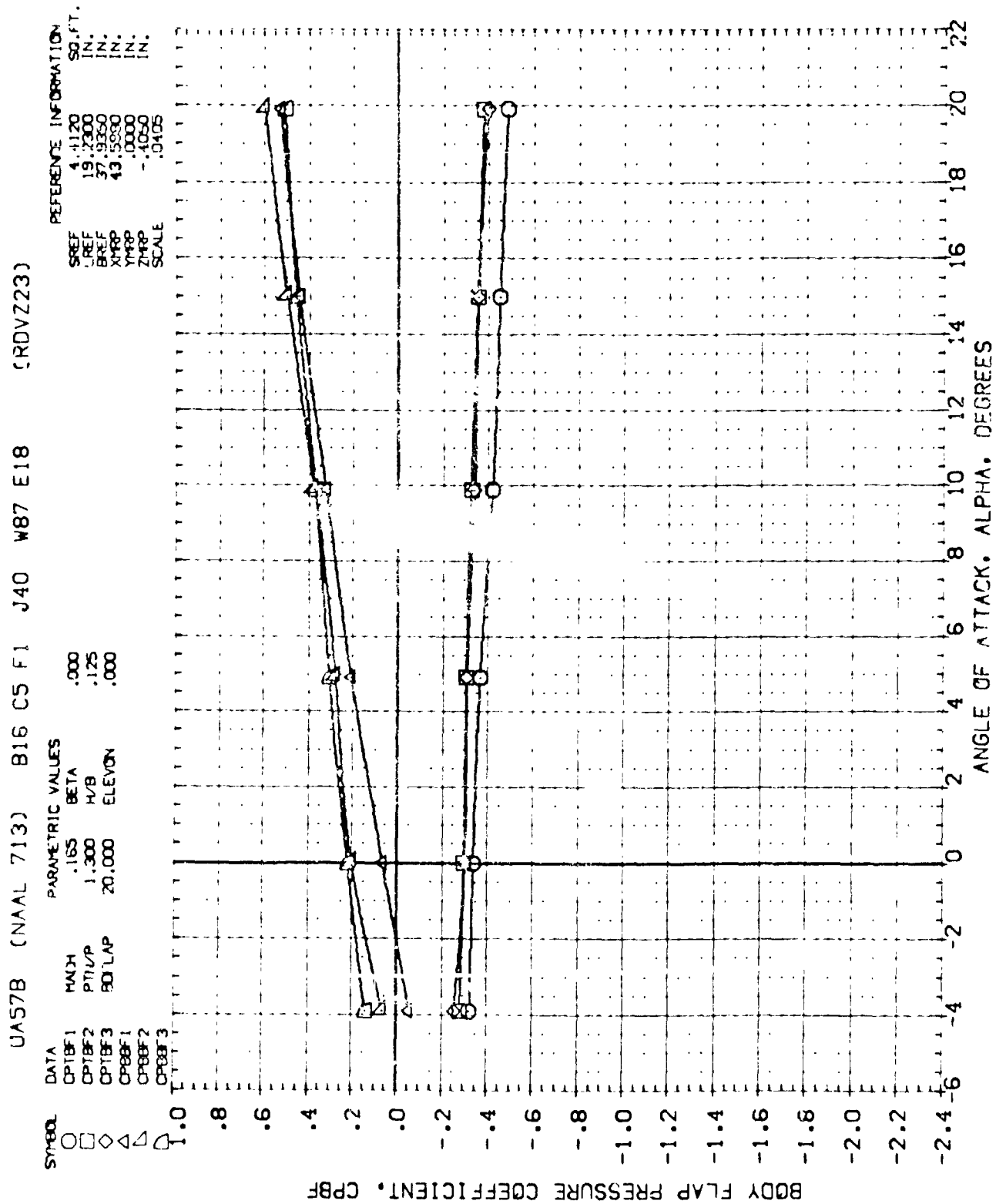


FIG. 20 80th FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BUFLAP

04578 (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ22)

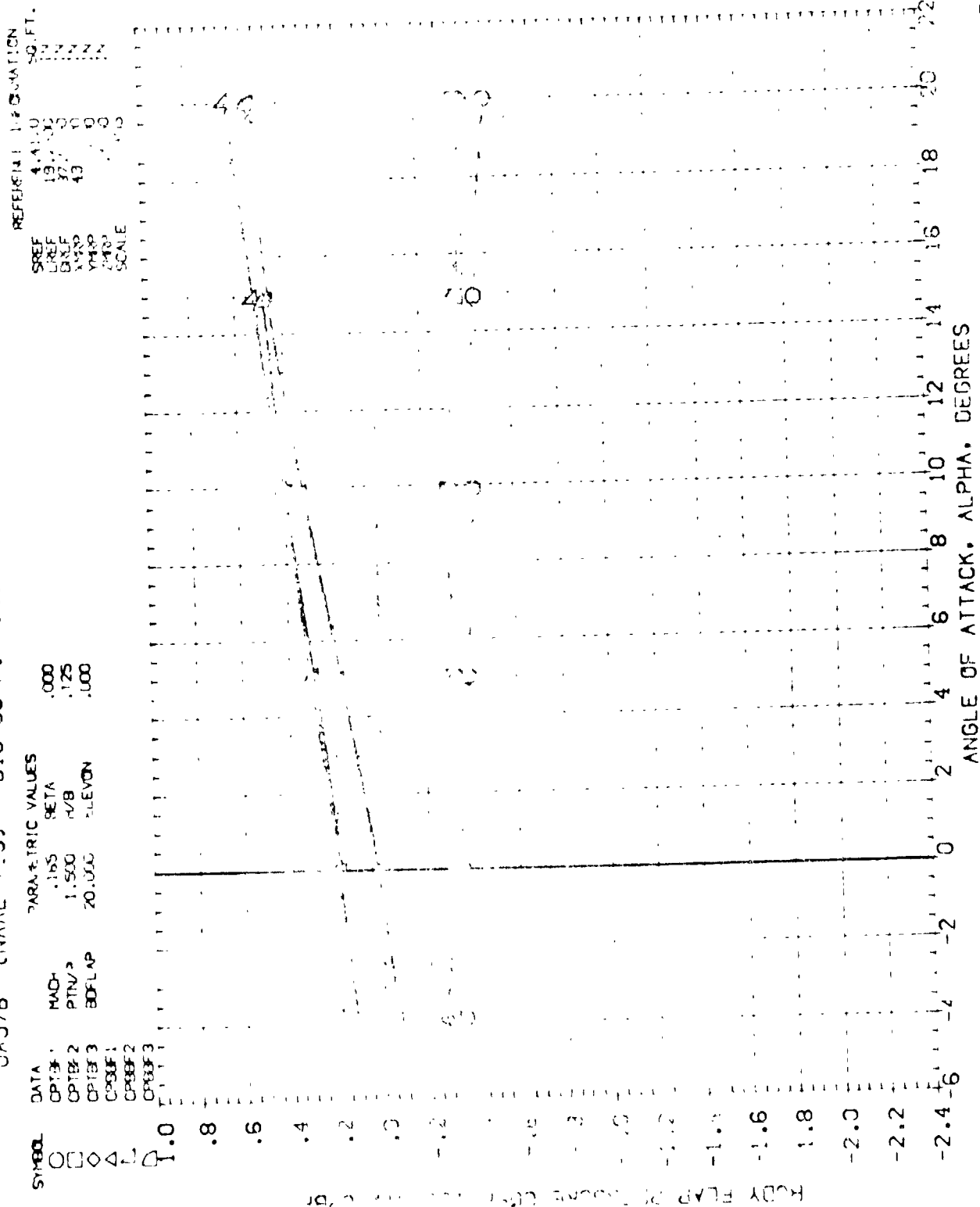


FIG. 20 BODY FLAP PRESSURE COEFFICIENTS WITH J40 . 0 ELEVON AND 20 BDFLAP

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ21)

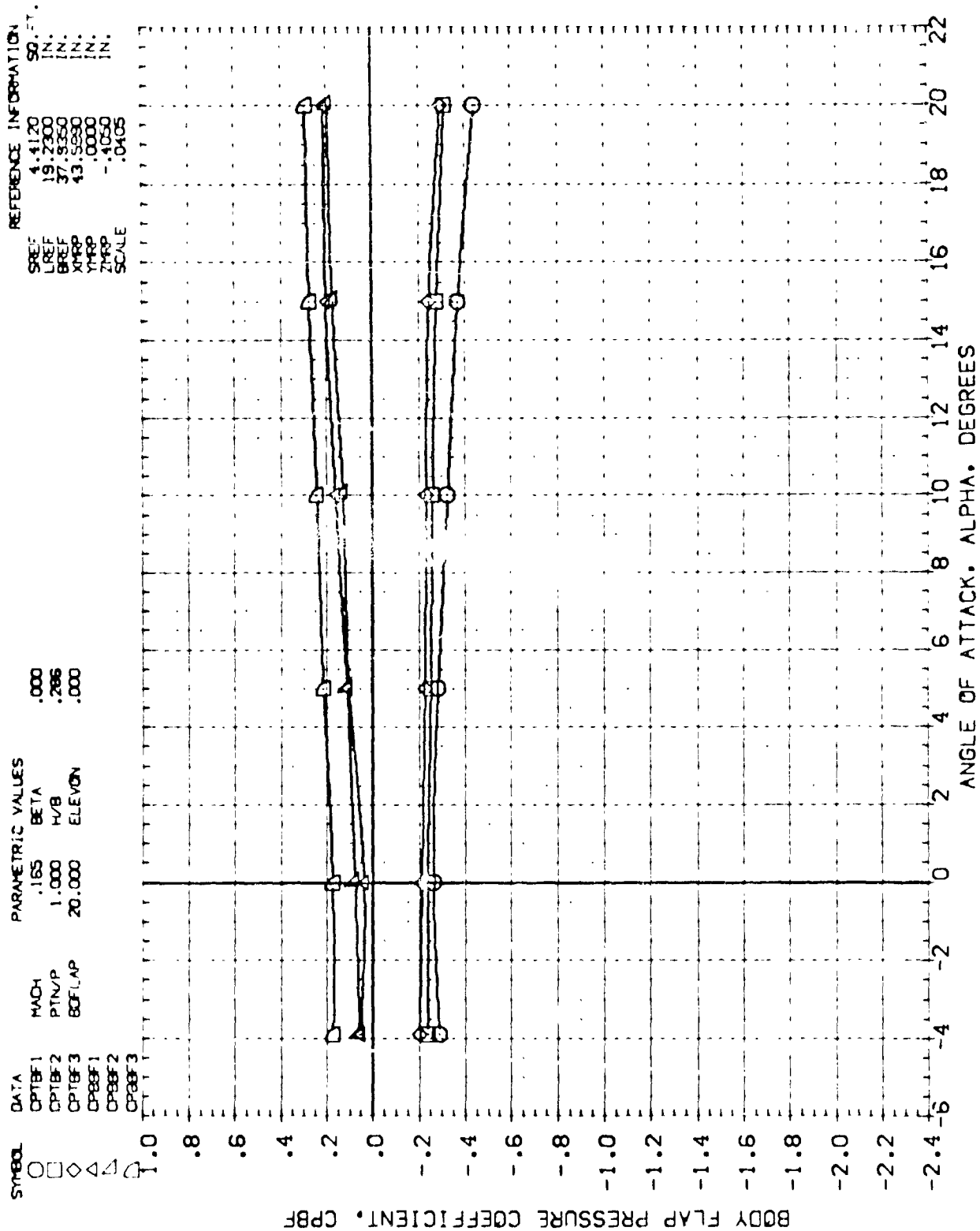


FIG. 20 800 FLAP PRESSURE COEFFICIENTS WITH J40 , 0 ELEVON AND 20 BOFLAP

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532



FIG. 20 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BOFLAP



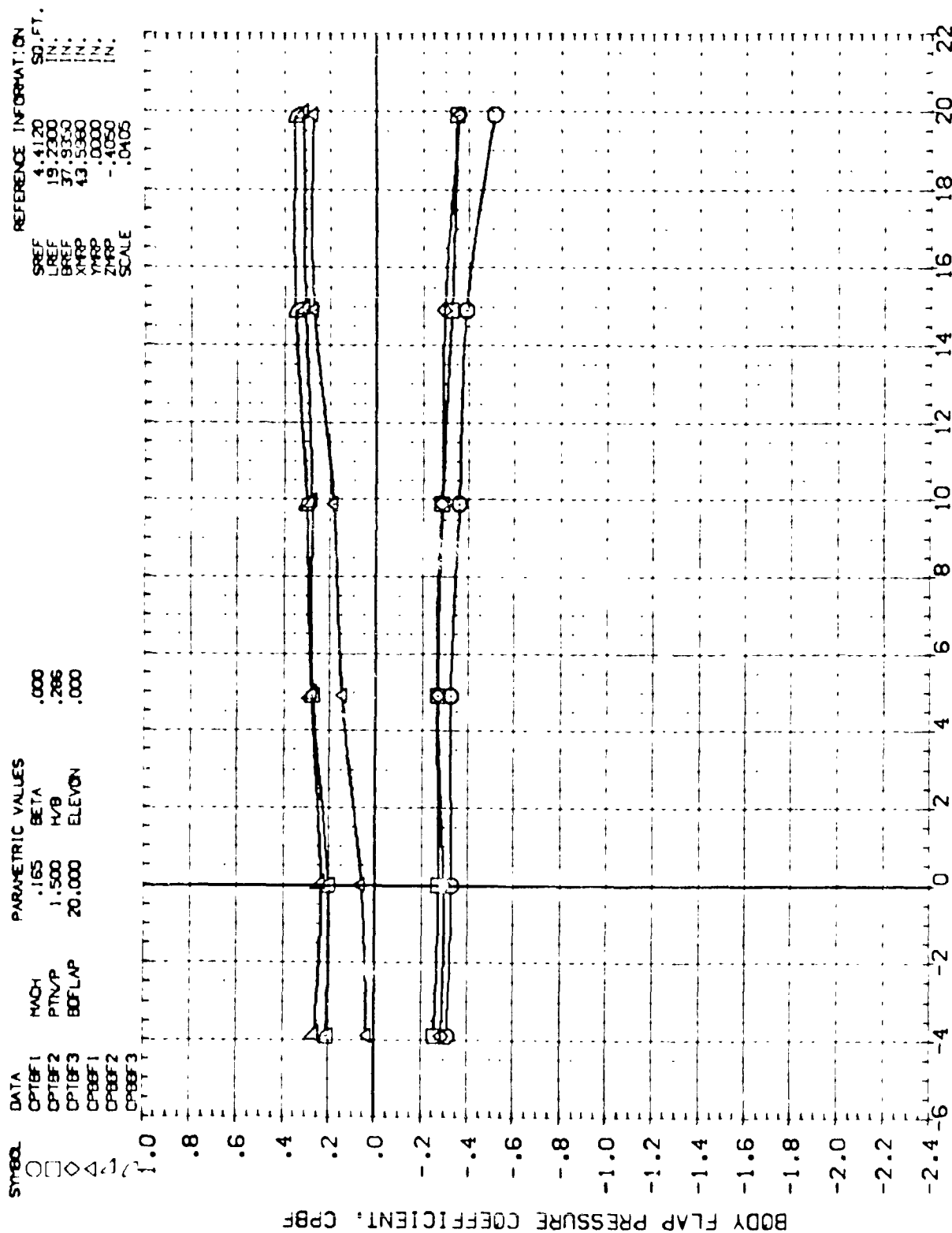


FIG. 20 BODY FLAP PRESSURE COEFFICIENTS WITH J40 , 0 ELEVON AND 20 BOFLAP

| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
|--------|--------|-------------------|-----------------------|
| ○ | CPTEF1 | MACH | SREF 4.4120 SQ.FT. |
| □ | CPTEF2 | PTN/P | LREF 19.2300 IN. |
| ◇ | CPTEF3 | BDFLAP | BREF 37.9300 IN. |
| △ | CPBBF1 | W/B | XREF 43.5000 IN. |
| ▽ | CPBBF2 | ELEVON | YREF .0000 IN. |
| ▽ | CPBBF3 | | ZREF -.4000 IN. |
| | | | SCALE .0405 |

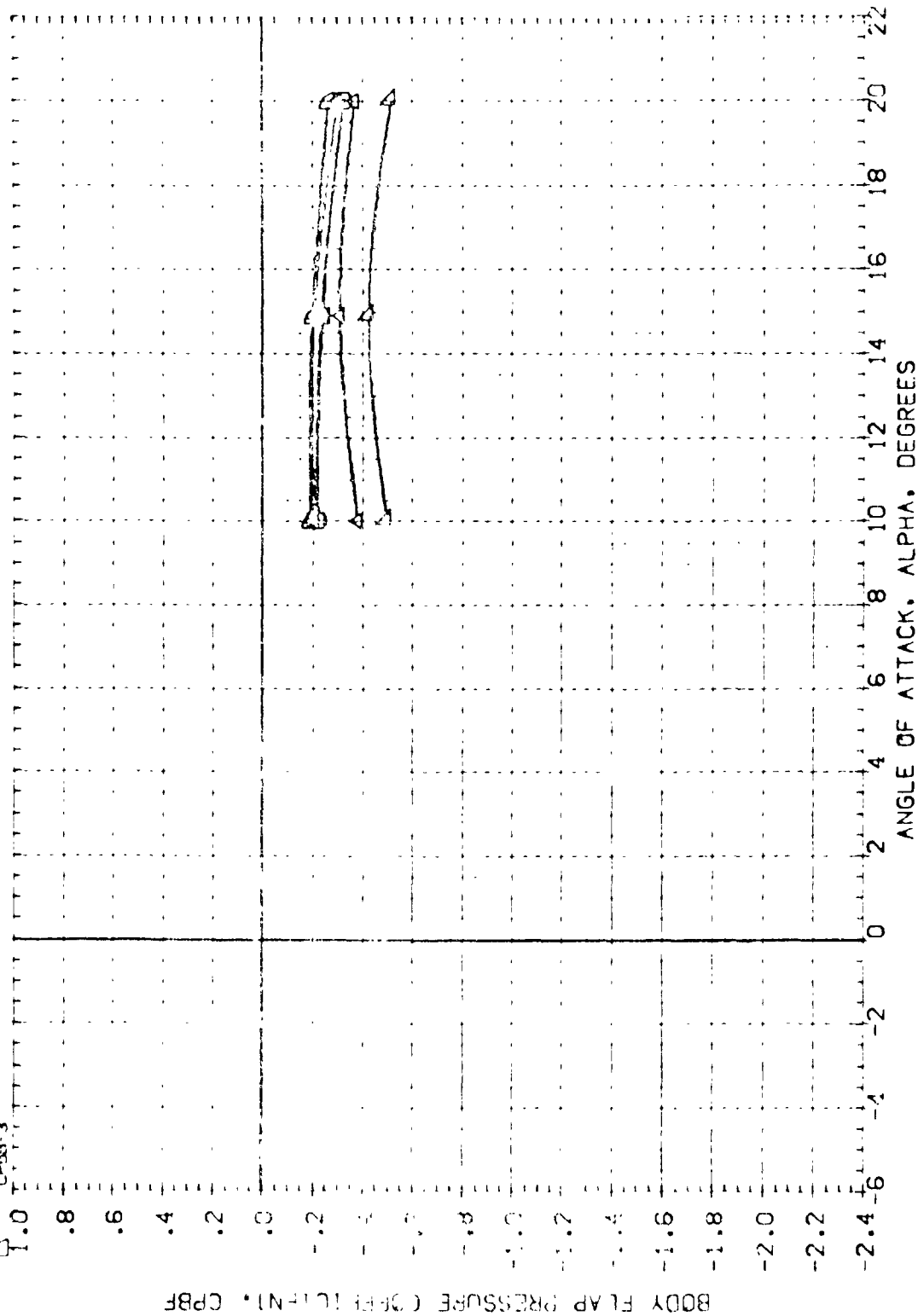


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BDFLAP

GA57B (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ32)

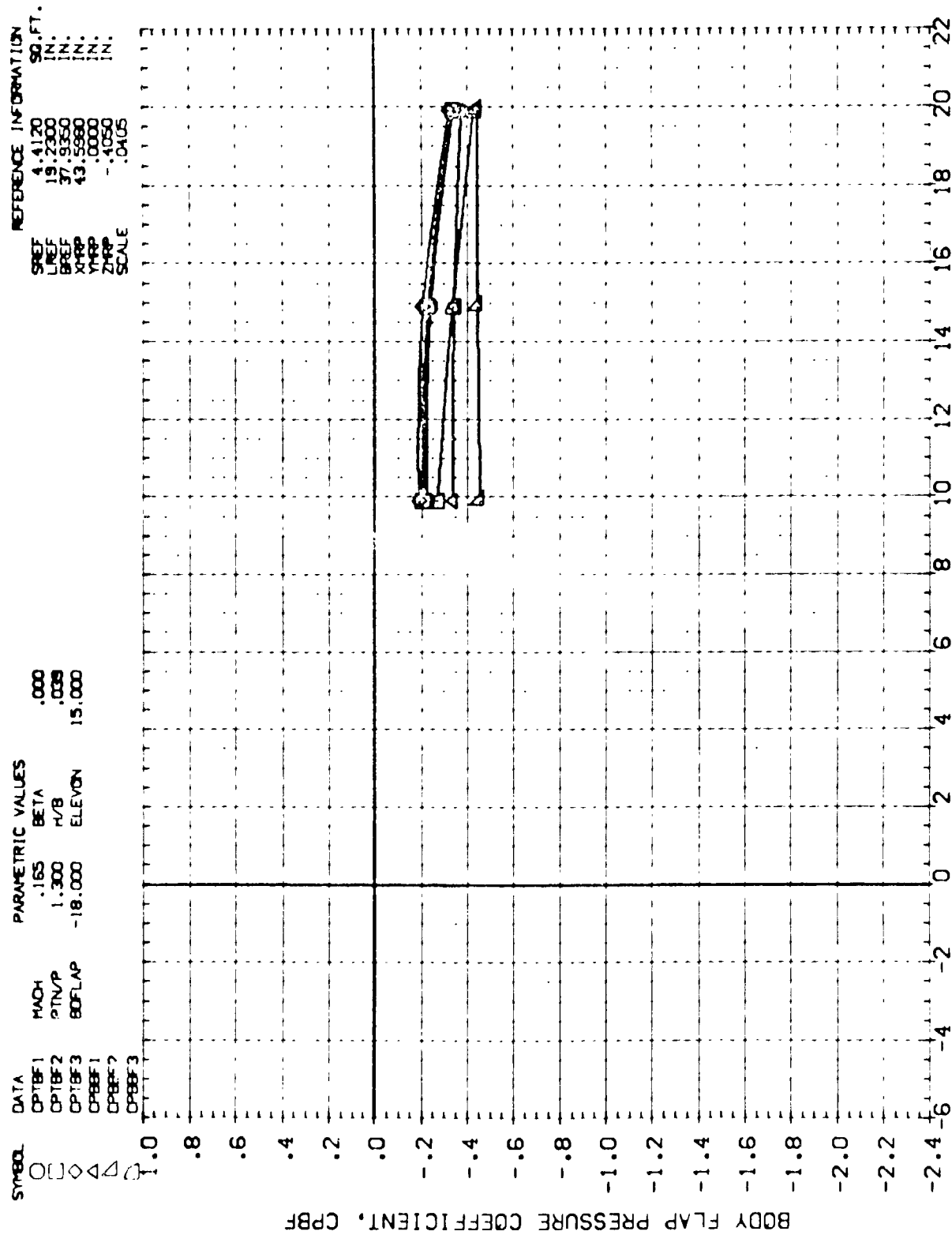


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BOFLAP

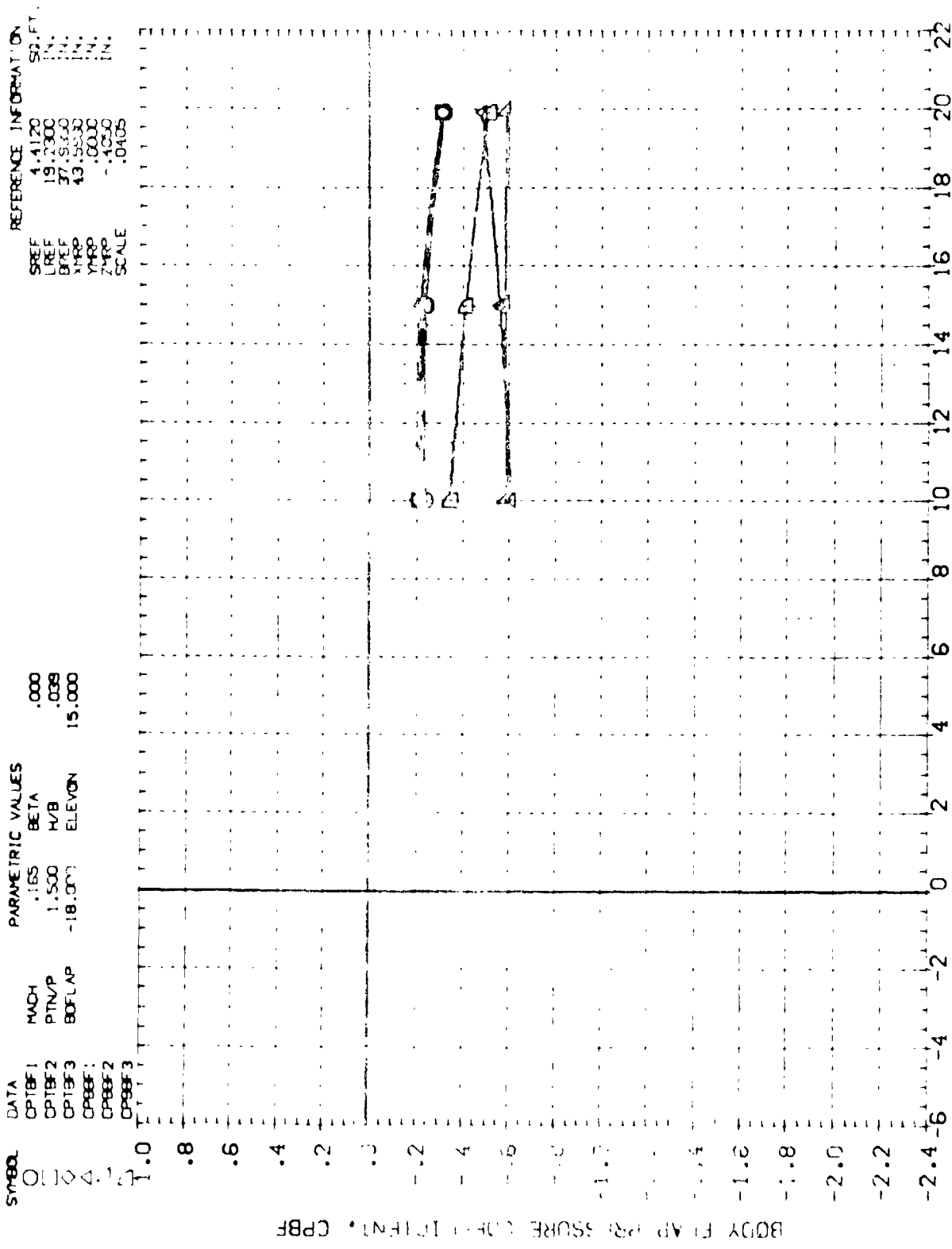


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BOFLAP

0A57B (NAAL 713) B16 C5 F1 J40 W87 E18 (ROVZ30)

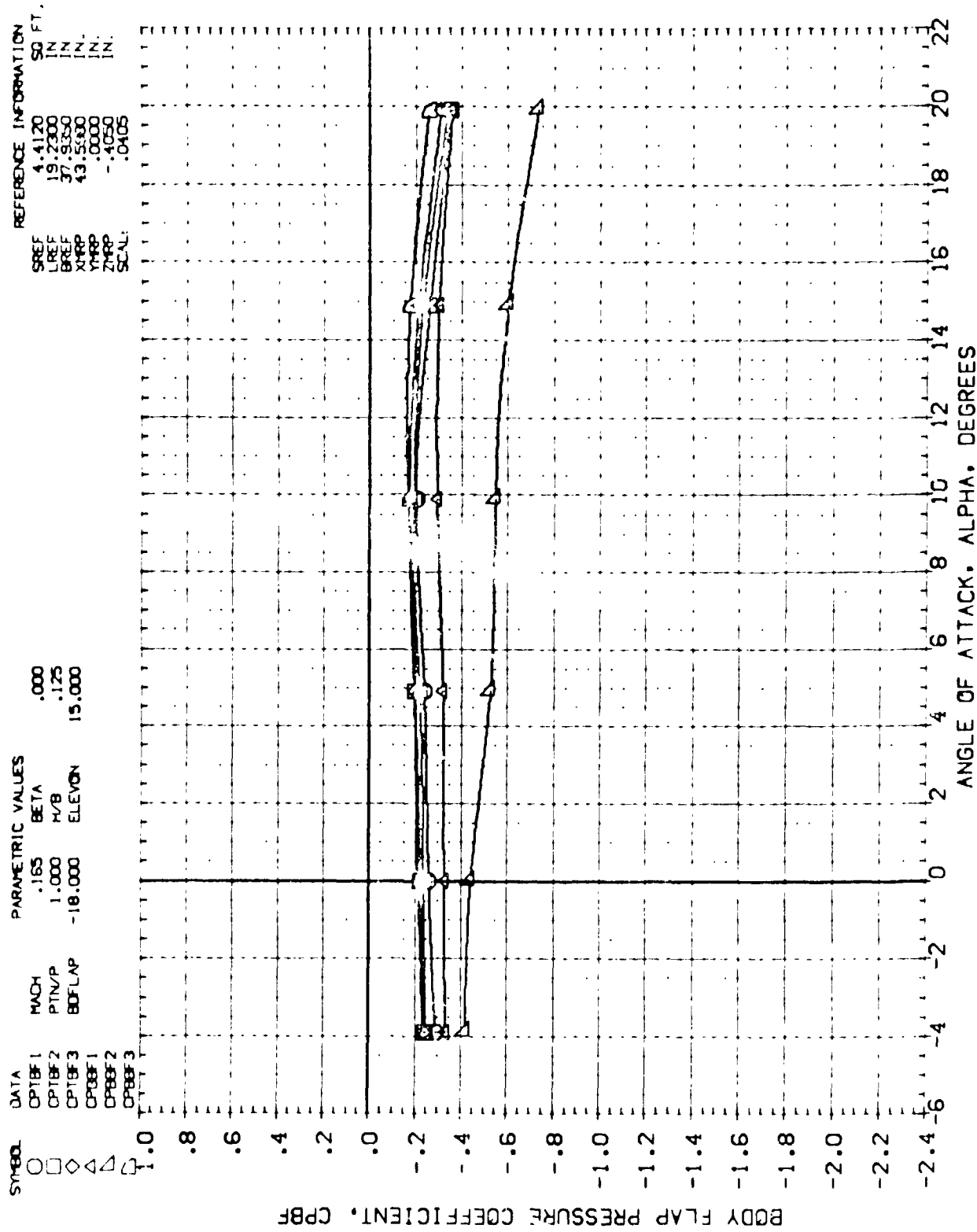


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BDFLAP

0A578 (NAAL 713) B16 C5 F1 J40 W87 E18 (RDVZ29)

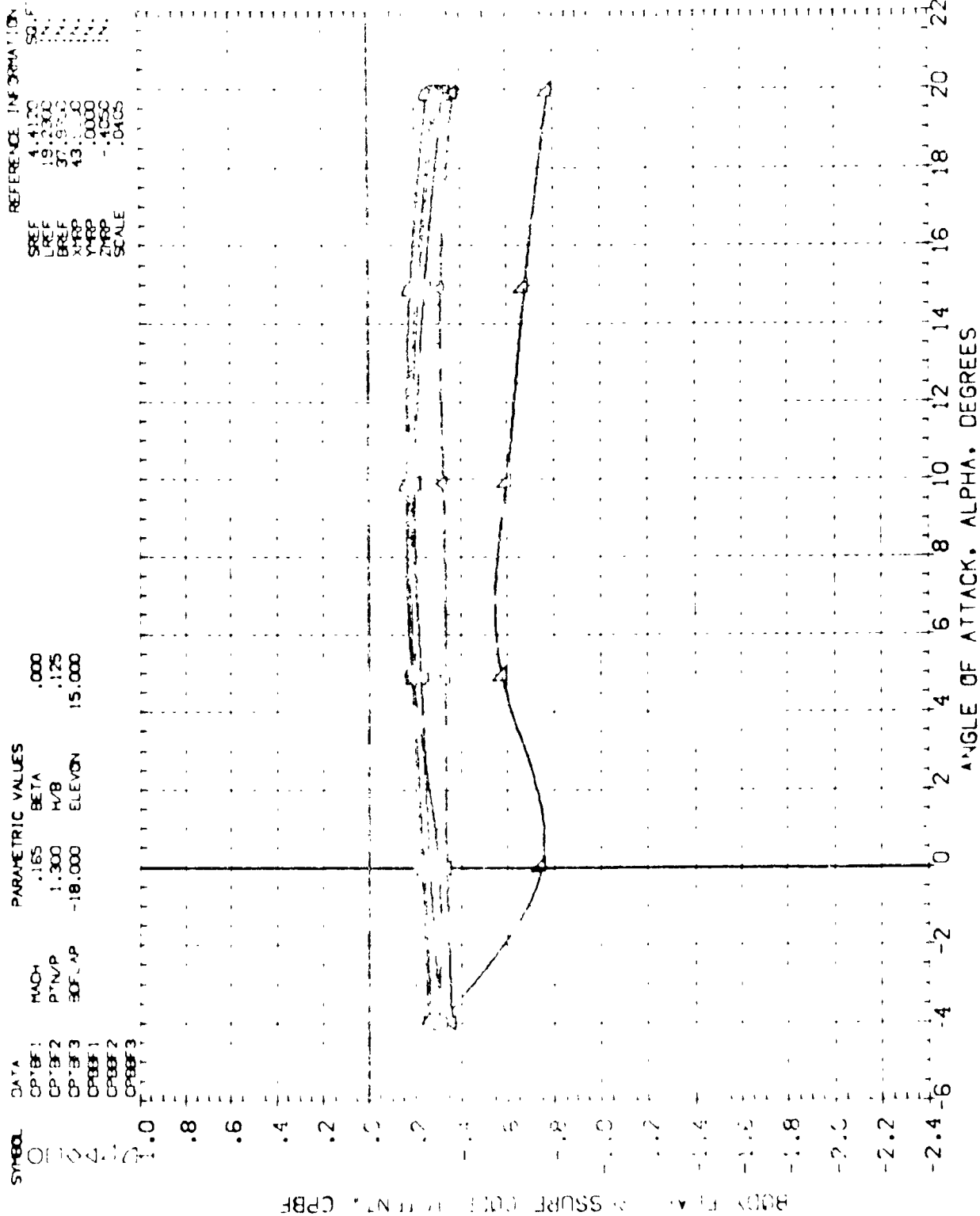


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BOFLAP

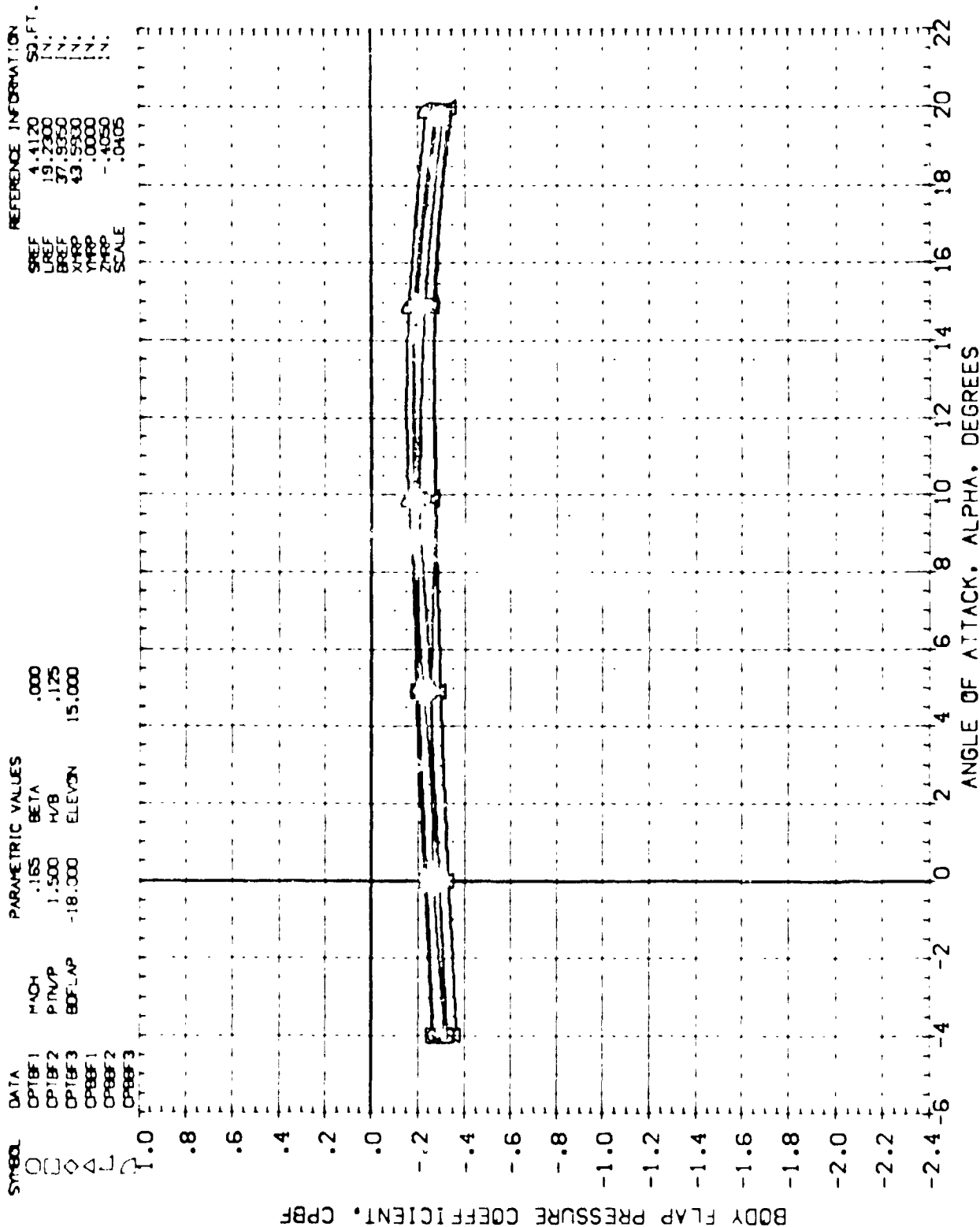


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40 , 15 ELEVON AND -18 BDFLAP

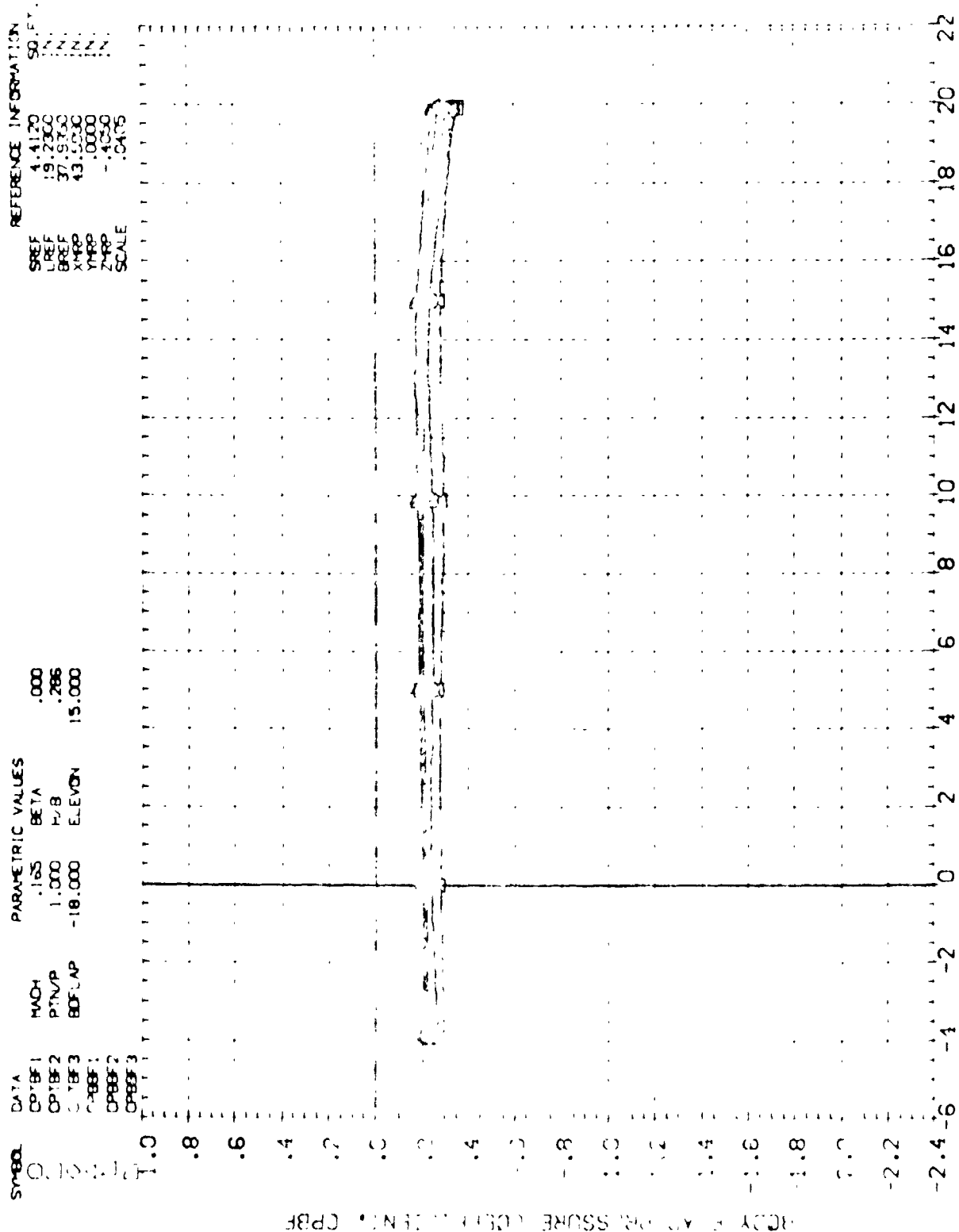


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BOFLAP

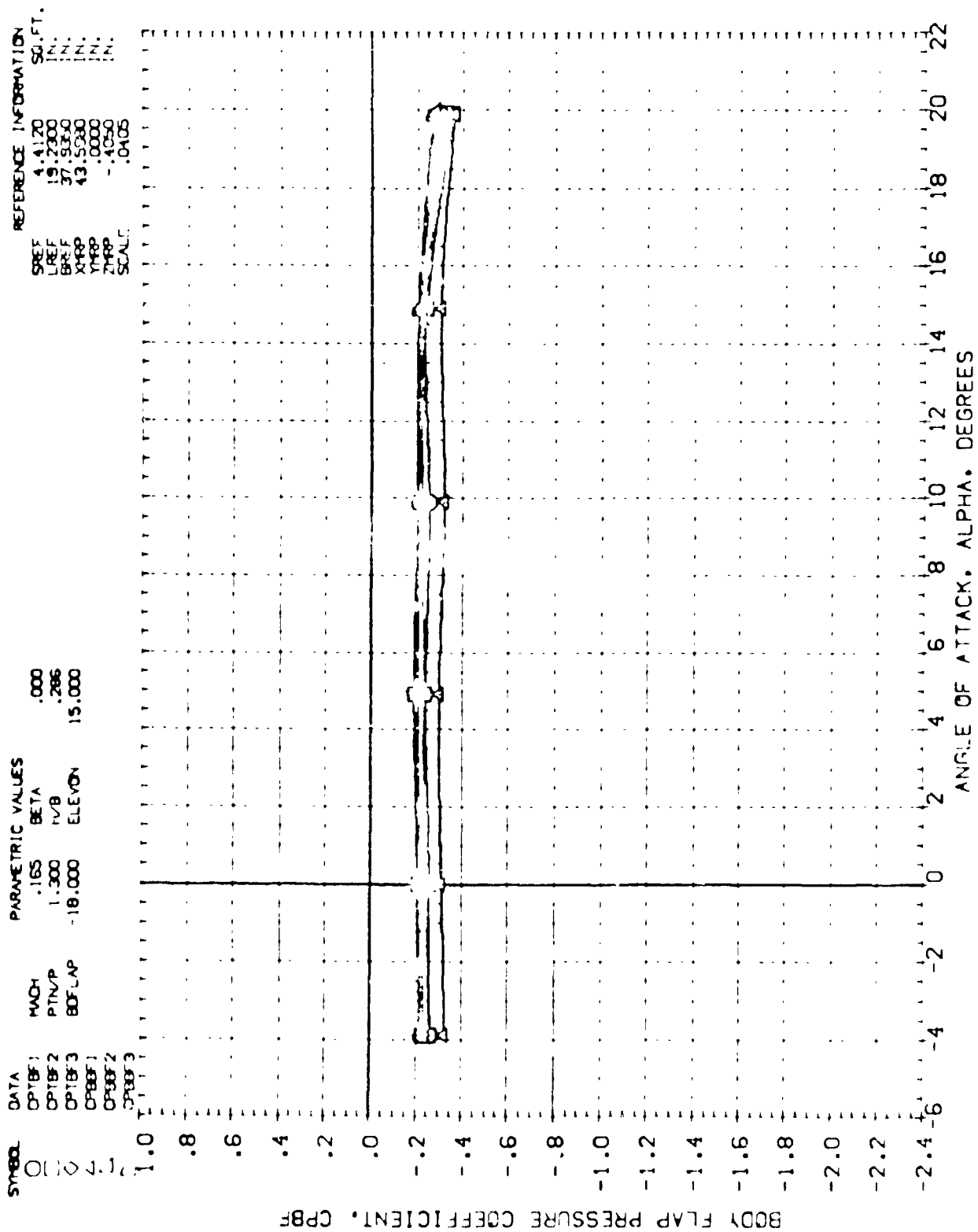


FIG. 2: BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BOFLAP

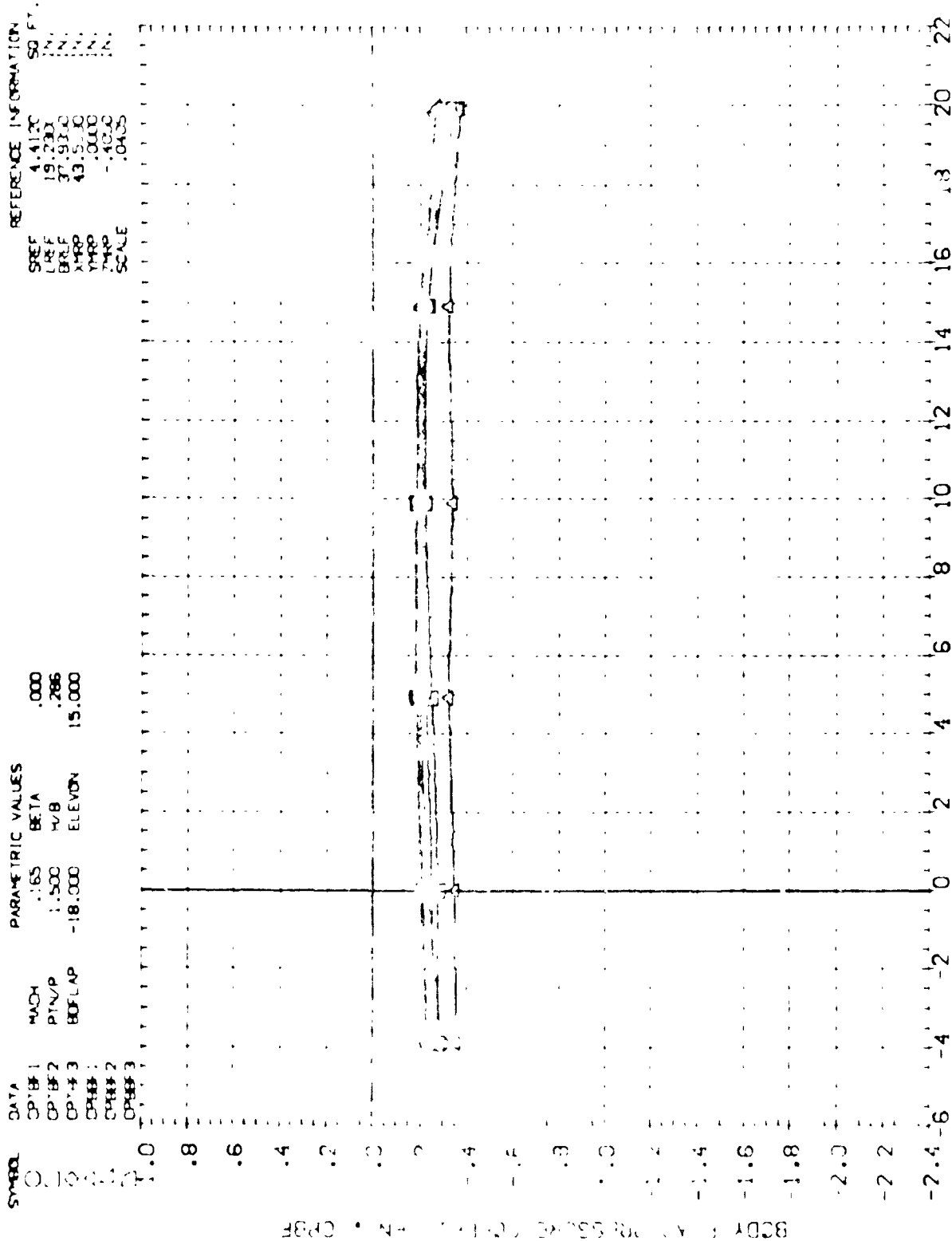


FIG. 21 BODY FLAP PRESSURE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BOFLAP

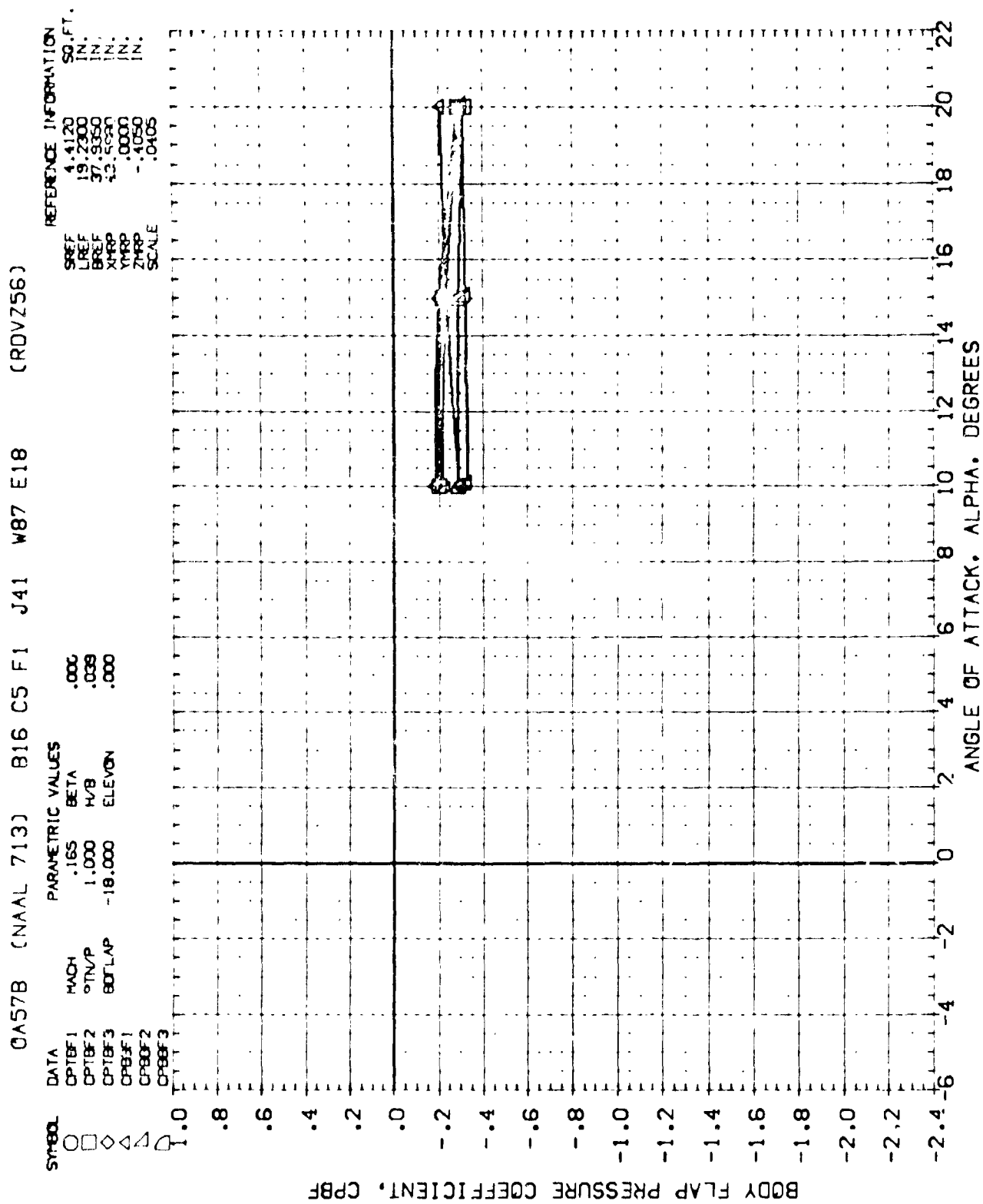


FIG. 22 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BD-FLAP

0A57B (NAAL 713) B16 C5 F1 J41 W87 E18 (ROVZ55)

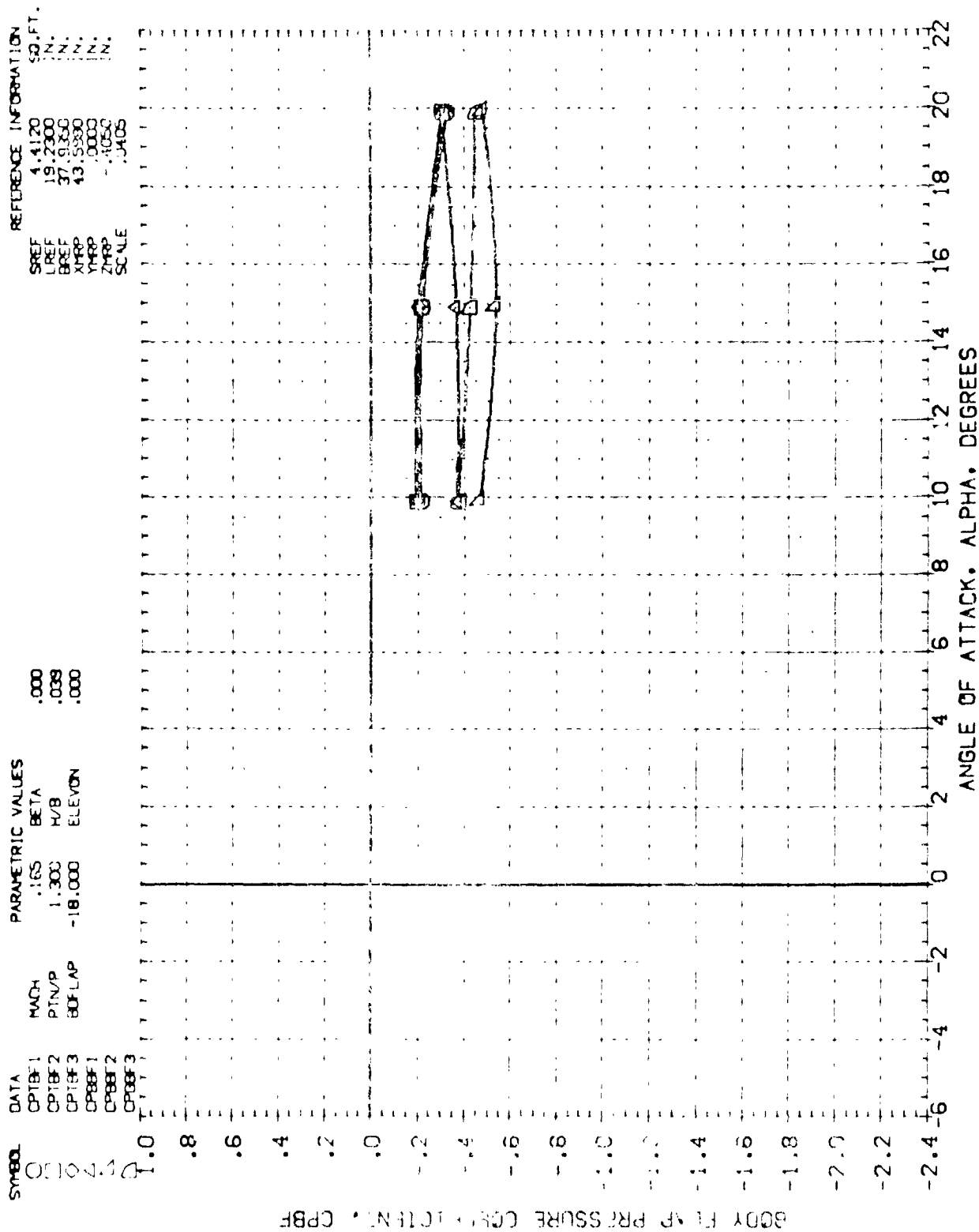


FIG. 22 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BDFLAP

0A578 (NAAL 713) 816 C5 F1 J41 W87 E18 (RDVZ58)

| SYMBOL | | DATA | | PARAMETRIC VALUES | | REFERENCE INFORMATION | |
|--------|--------|-------|---------|-------------------|------|-----------------------|---------|
| ○ | CP1BF1 | MACH | .165 | BETA | .000 | SREF | 4.4120 |
| □ | CP1BF2 | PTN/P | 1.000 | H/B | .125 | LREF | 19.2300 |
| ◇ | CP1BF3 | B/LAP | -18.000 | ELEVON | .000 | BREF | 37.9250 |
| △ | CP8BF1 | | | | | XMRP | 43.5530 |
| ▽ | CP8BF2 | | | | | YMRP | .0000 |
| ○ | CP8BF3 | | | | | ZMRP | -4.050 |
| | | | | | | SCALE | .0405 |

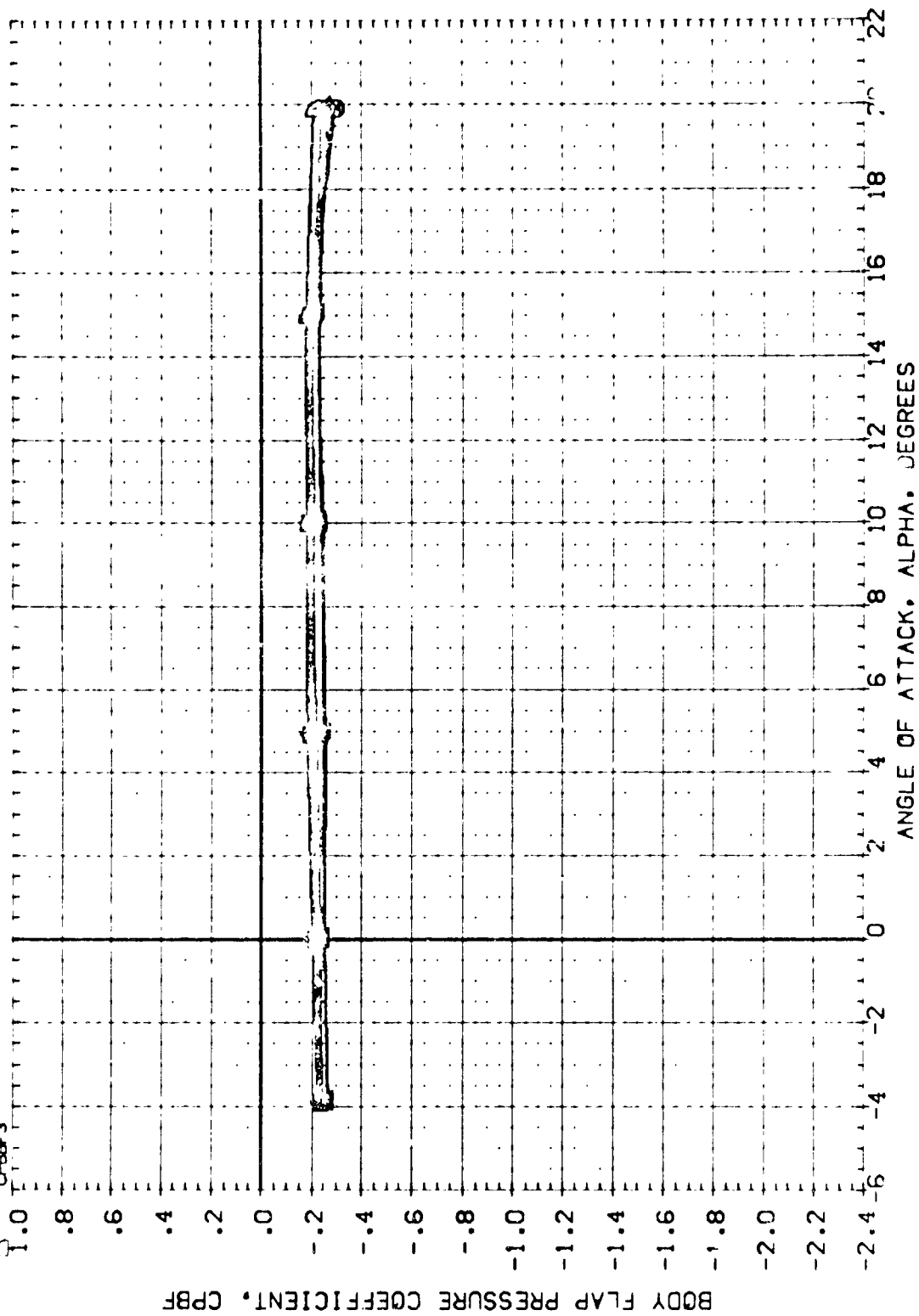


FIG. 22 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BDFLAP

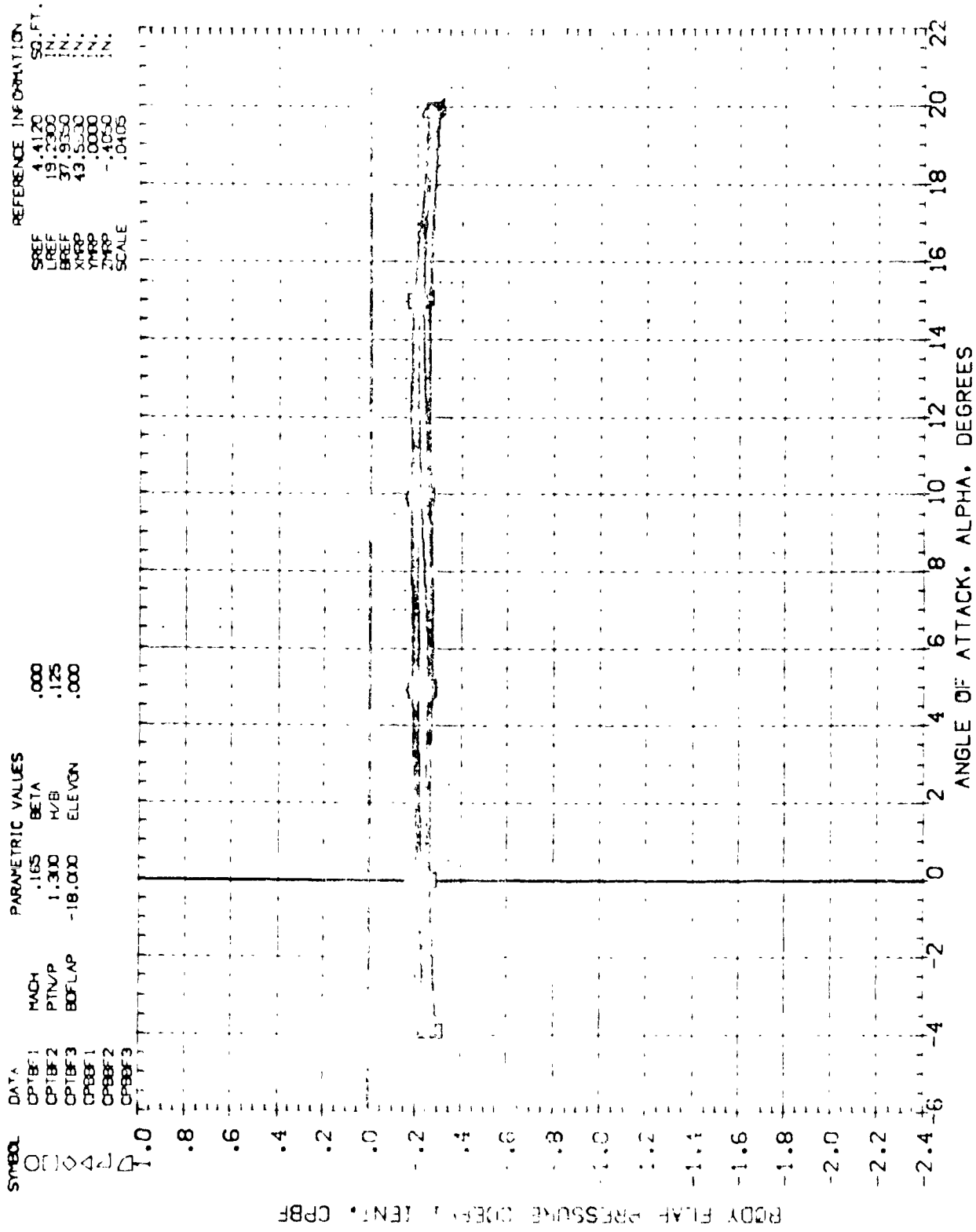


FIG. 22 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP

0A578 (NAAL 713) B16 C5 F1 J41 W87 E18 (RDVZ53)

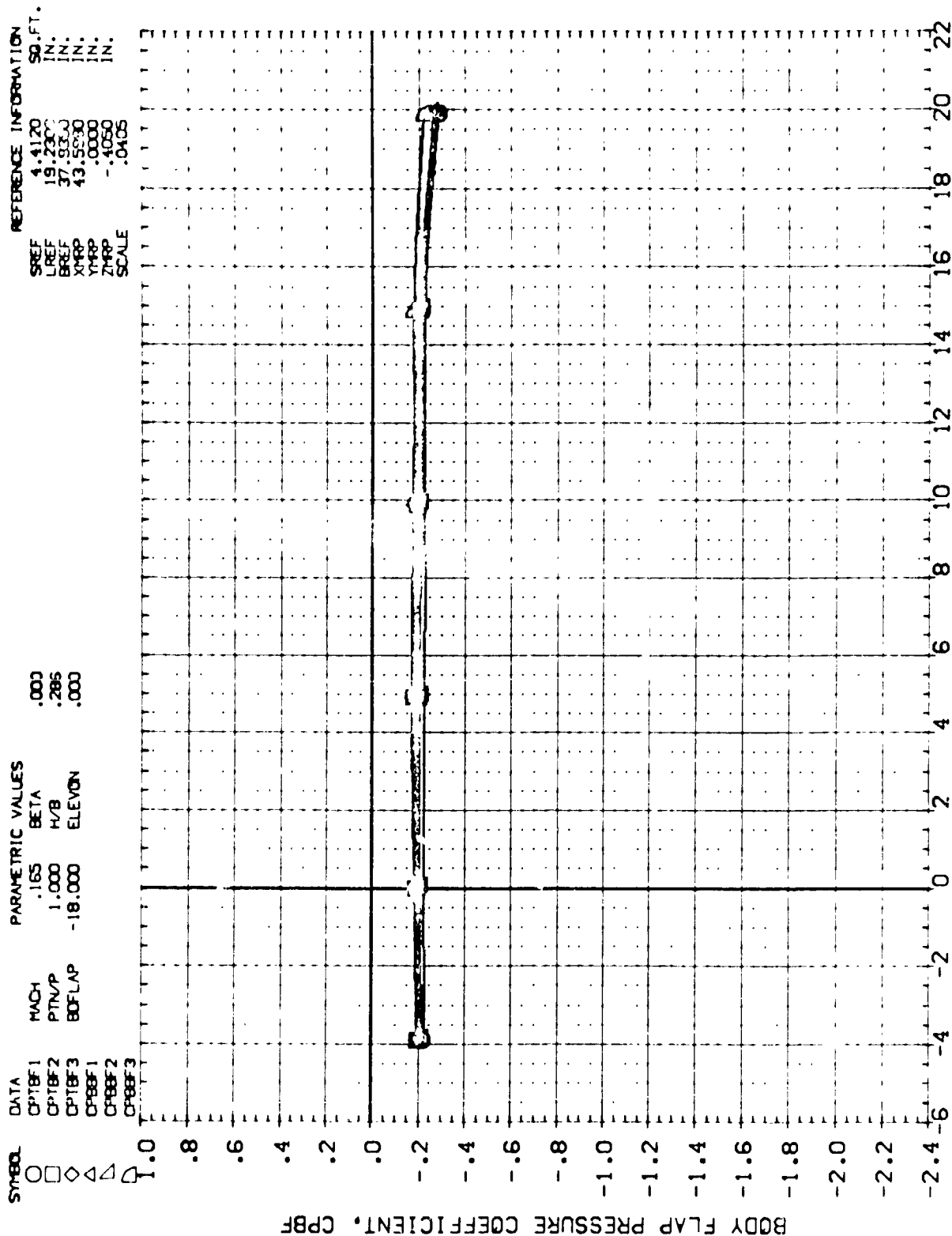


FIG. 22 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP

0A57B (NAAL 713) B16 C5 F1 J41 W87 E18 (RDVZ52)

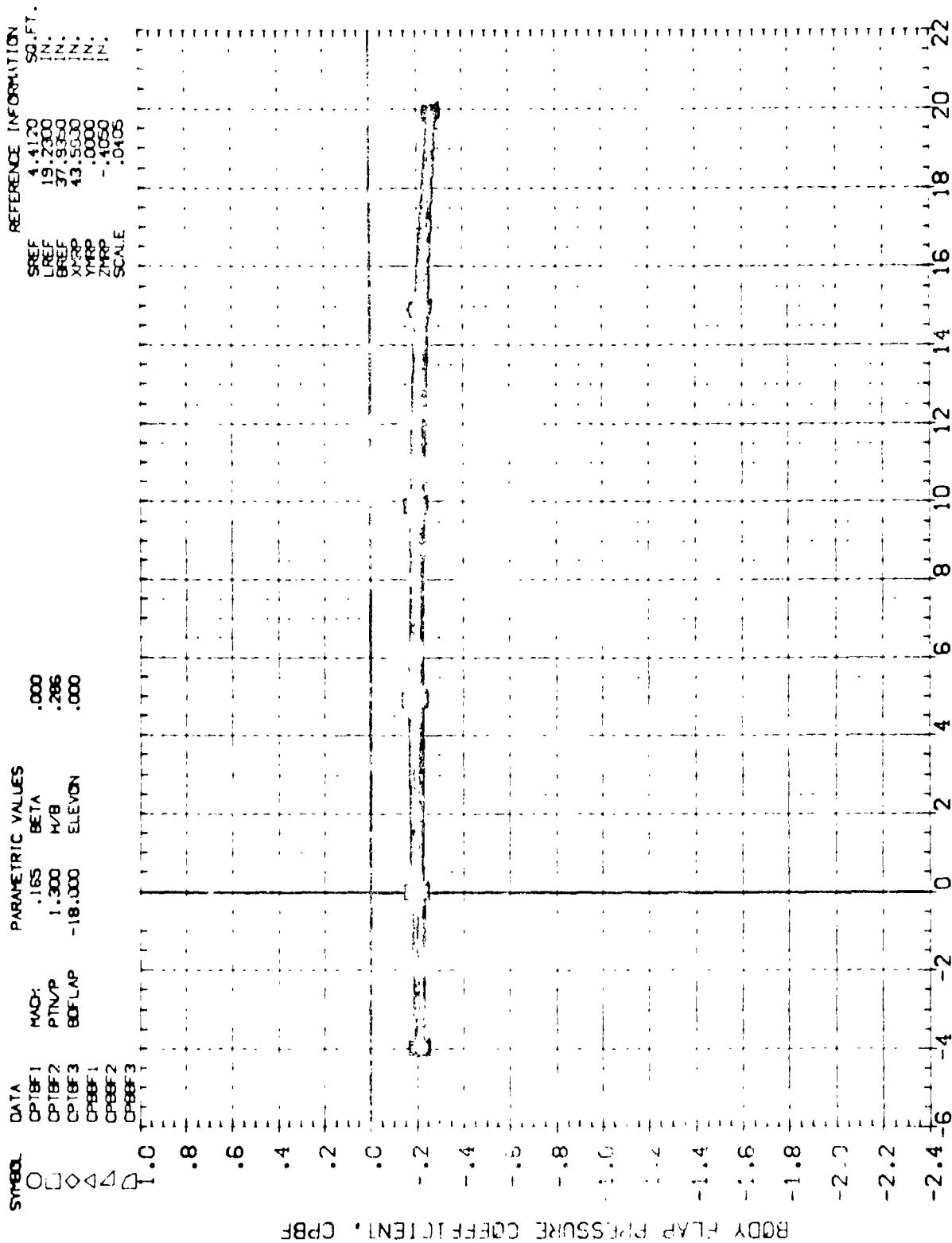


FIG. 22 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP

0A57B (NAAL 713) B16 C5 F1 J41 W87 E18 (RDVZ49)

| | | | |
|--------|--------|-------------------|-----------------------|
| SYMBOL | DATA | PARAMETRIC VALUES | REFERENCE INFORMATION |
| ○ | CPTBF1 | MACH | SREF |
| □ | CPTBF2 | .165 BETA | LREF |
| ◇ | CPTBF3 | 1.000 H/V | BREF |
| △ | CPBBF1 | -18.000 ELEVON | XTRP |
| ▽ | CPBBF2 | | YTRP |
| ◊ | CPBBF3 | | ZTRP |
| | | | SCALE |
| | | | 4.4120 SQ.FT. |
| | | | 13.2300 IN. |
| | | | 37.9350 IN. |
| | | | 43.5530 IN. |
| | | | .0000 IN. |
| | | | -.40750 IN. |
| | | | .0405 |

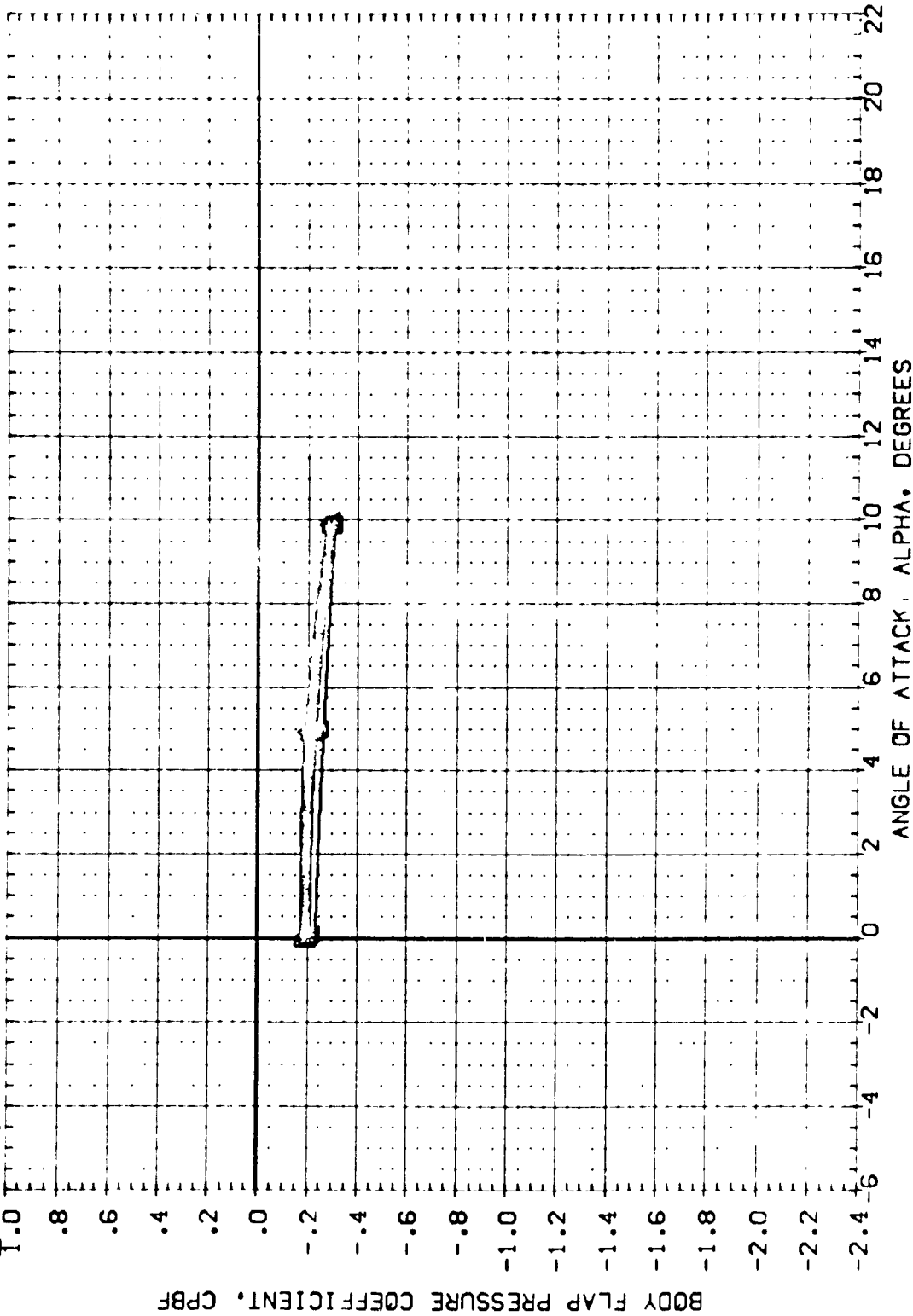
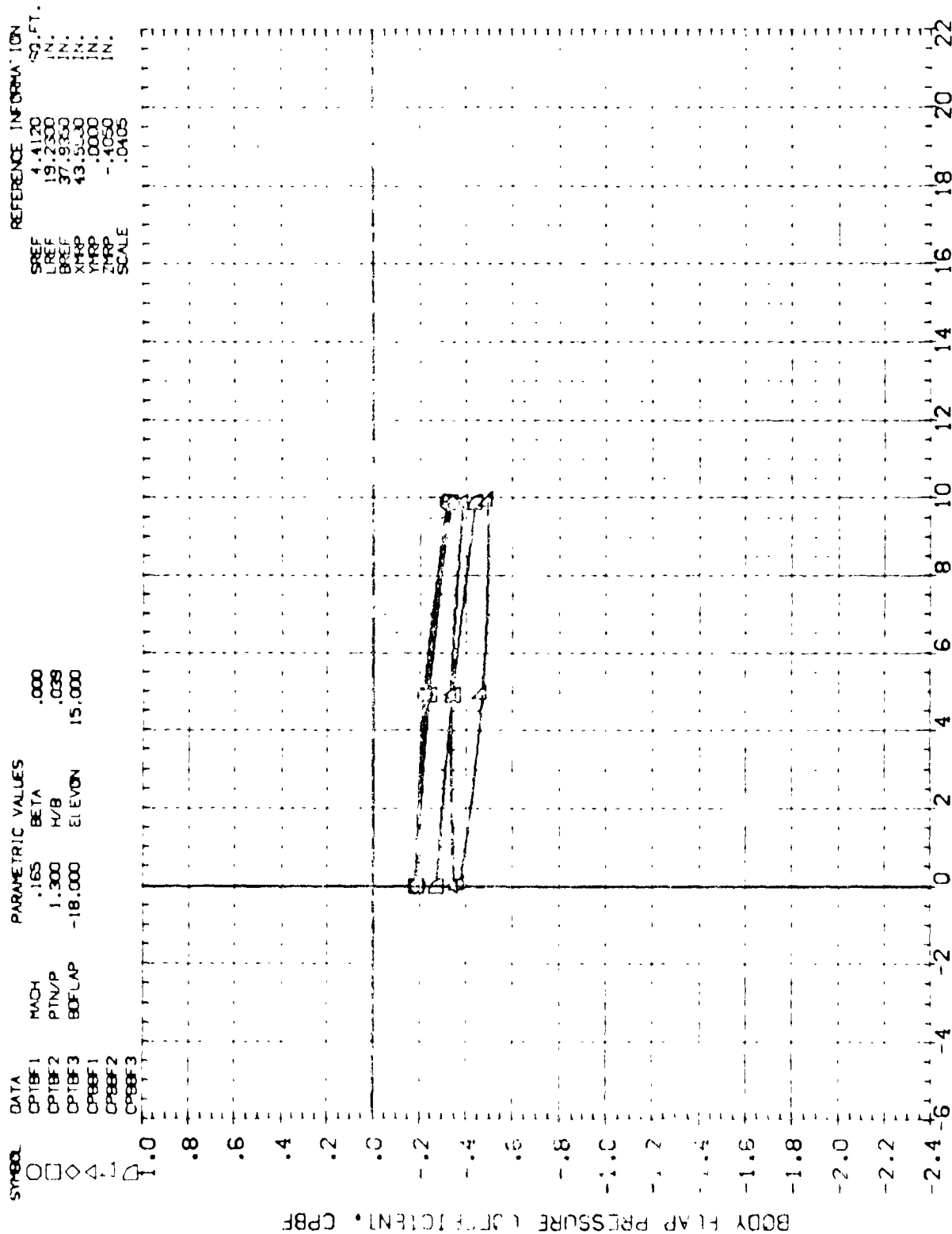


FIG. 23 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BOFLAP

0A57B (NAAL 713) B16 C5 F1 J41 W87 E18 (RDVZ48)



ANGLE OF ATTACK, ALPHA, DEGREES

FIG. 23 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BOFLAP

0A578 (NAAL 713) B16 C5 F1 J41 W87 E18 (RDVZ47)

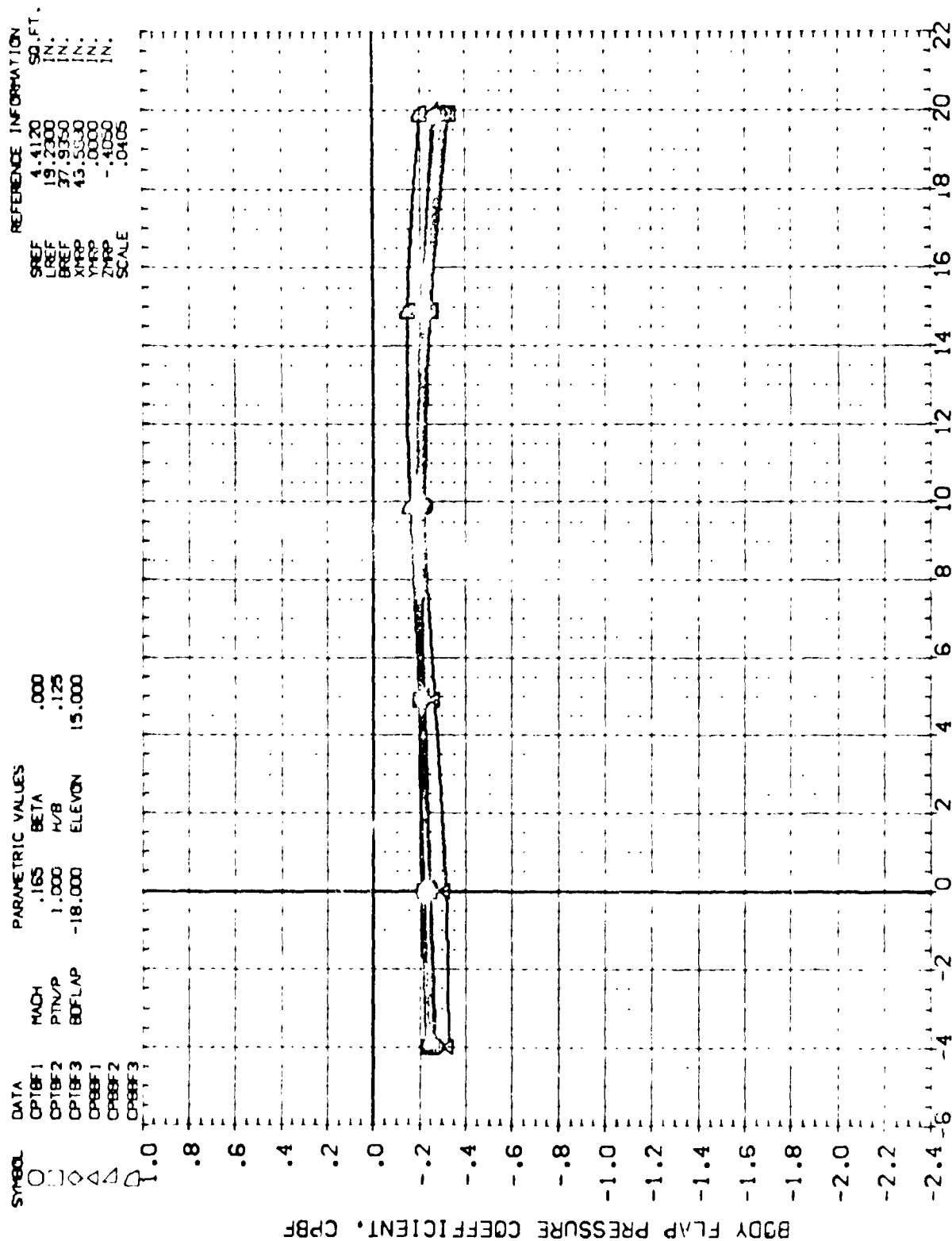


FIG. 23 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BOFLAP

0A578 (NAAL 713) B16 C5 F1 J41 W87 E18 (RDVZ46)

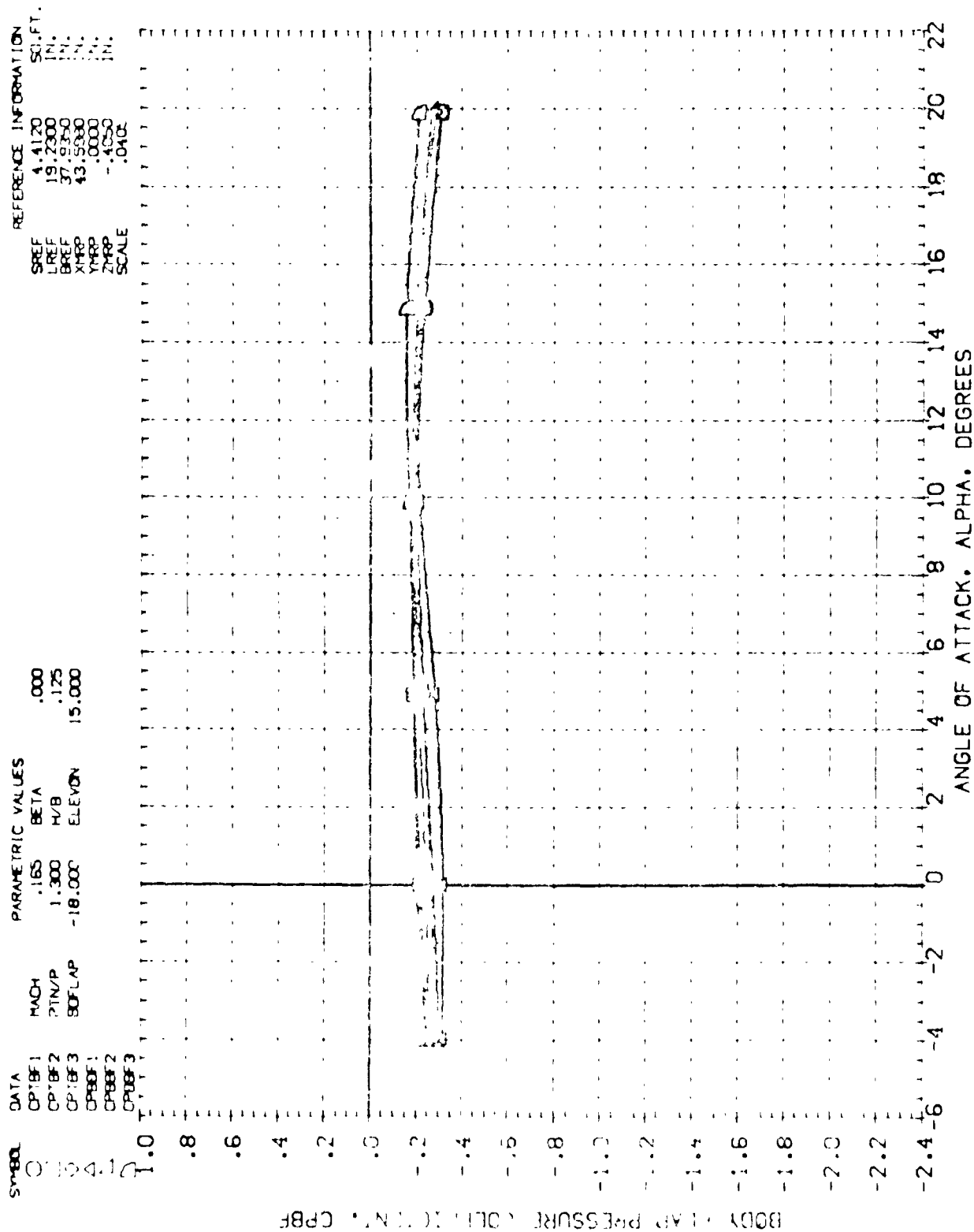


FIG. 23 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BDFLAP

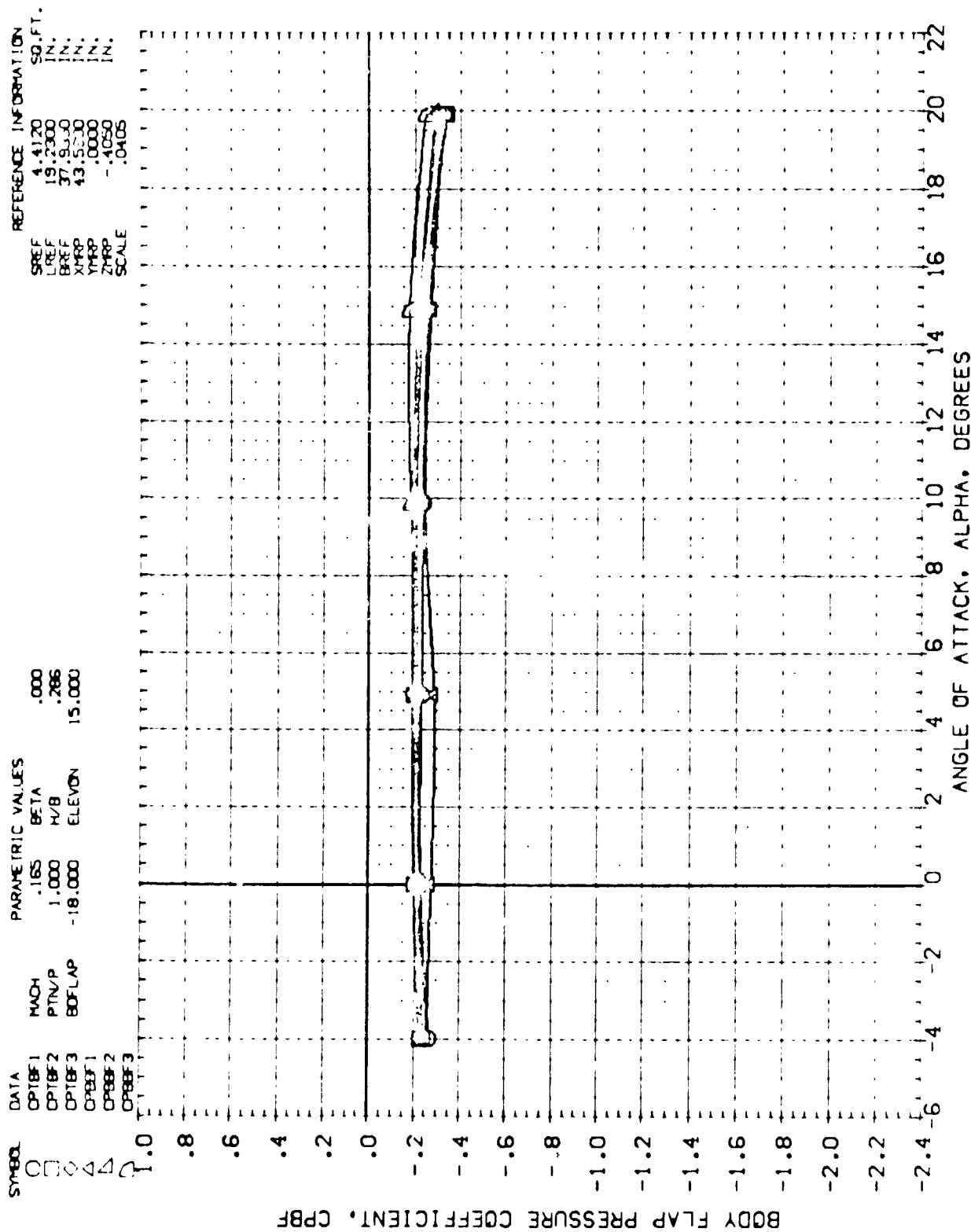


FIG. 23 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BOFLAP

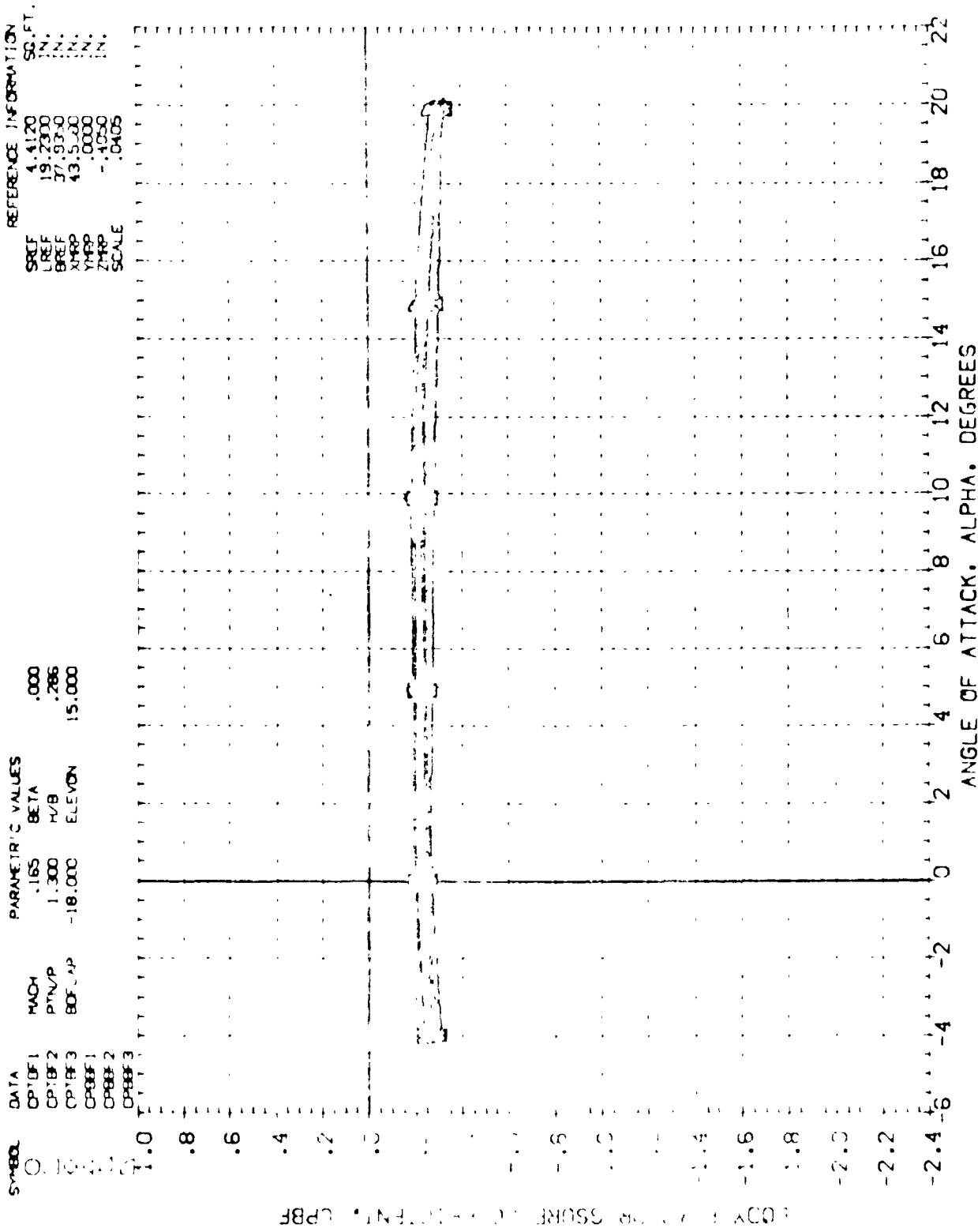


FIG. 23 BODY FLAP PRESSURE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BOFLAP

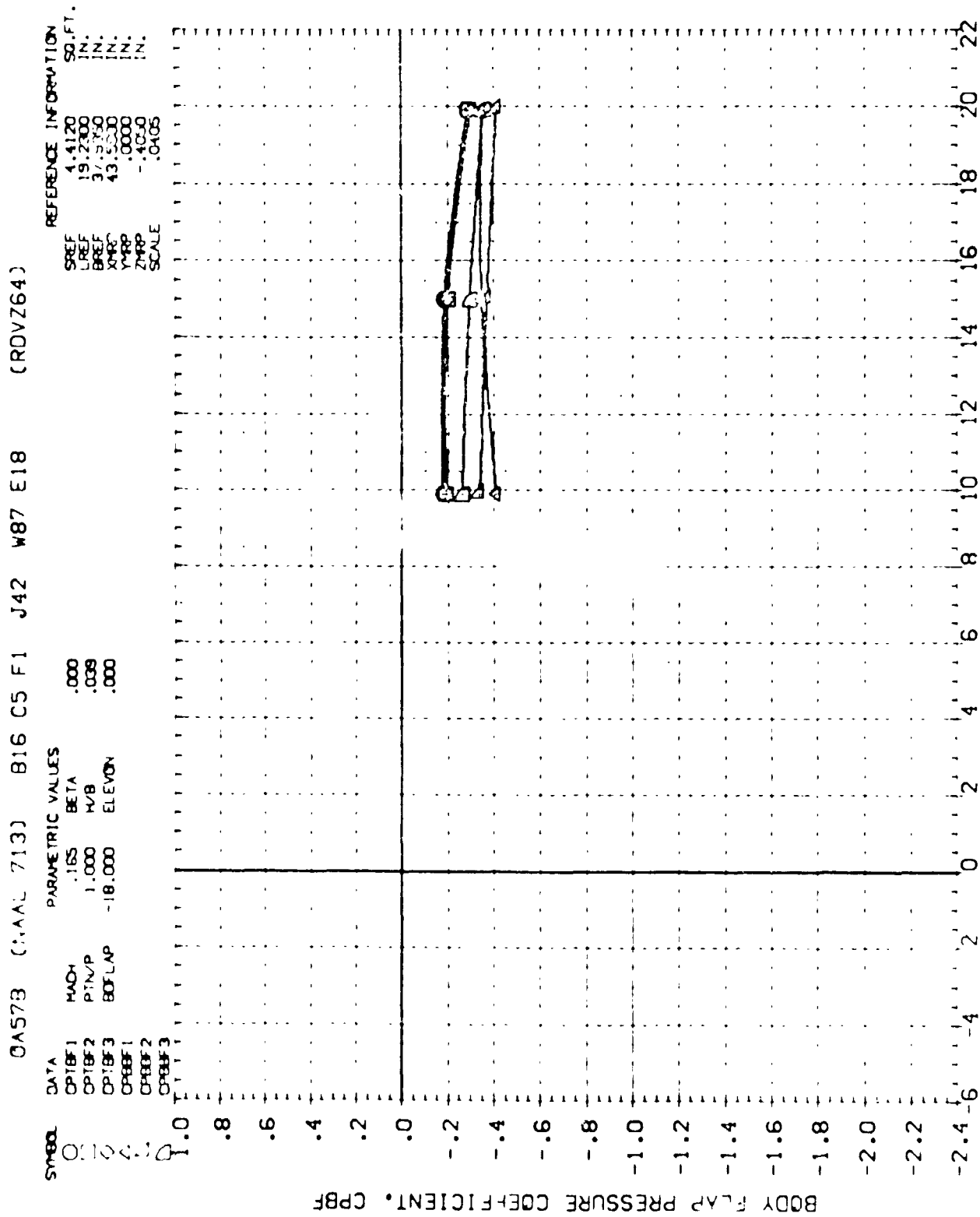


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42 . 0 ELEVON AND -18 BOFLAP

CASTB (AAL 713)

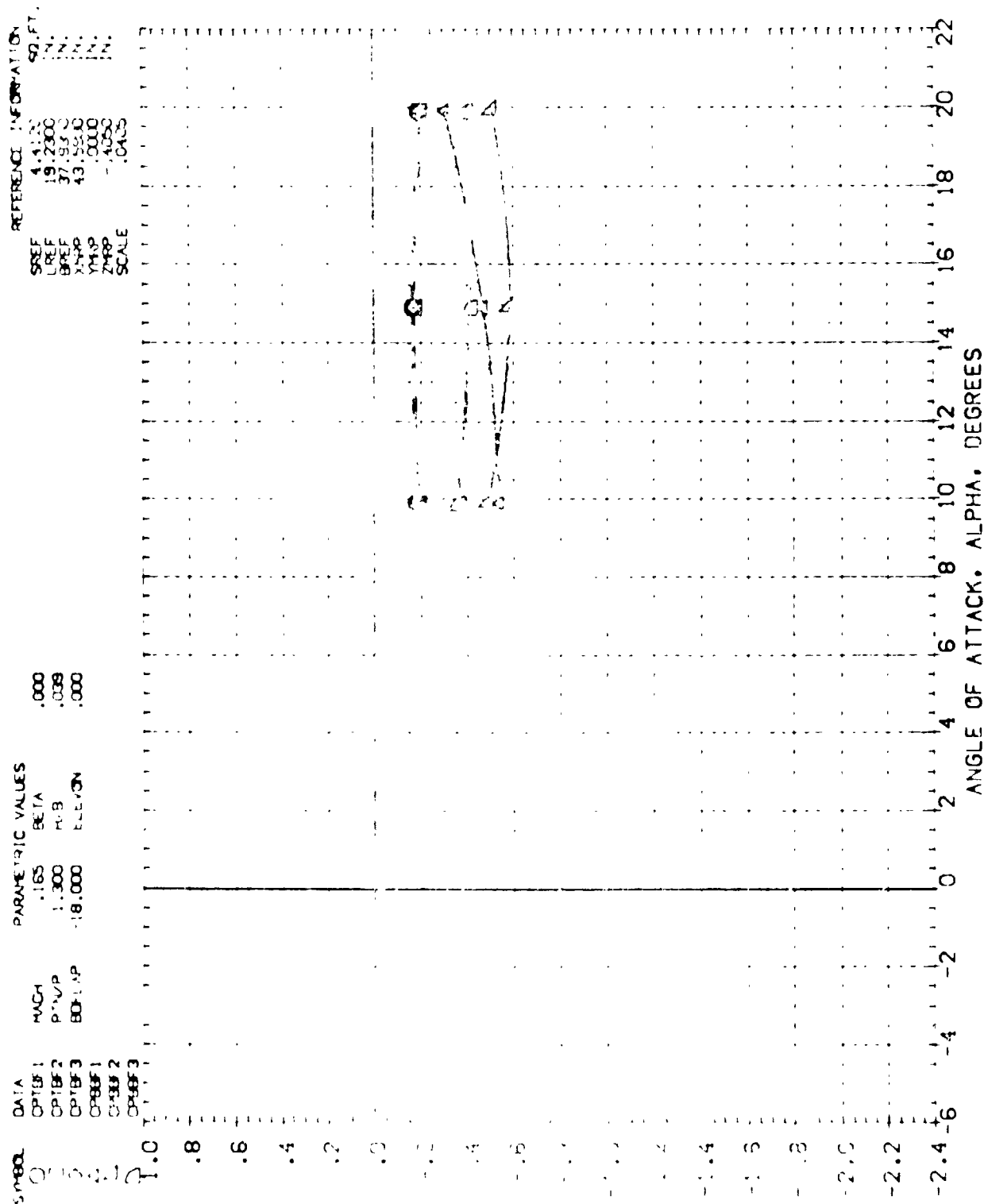


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BODYFLAP

0A578 (JAL 713) B16 C5 F1 J42 W87 E18 (RDVZ62)

| DATA | | PARAMETRIC VALUES | | REFERENCE INFORMATION | |
|--------|--------|-------------------|--------|-----------------------|---------|
| CP1BF1 | MACH | .165 | BETA | SREF | 4.4120 |
| CP1BF2 | PTN/P | 1.500 | H/B | LREF | 19.2300 |
| CP1BF3 | BDFLAP | -18.000 | ELEVON | BREF | 37.8150 |
| CP3BF1 | | | | YMRP | 43.5900 |
| CP3BF2 | | | | ZMRP | .0000 |
| CP3BF3 | | | | ZMRP | -4050 |
| | | | | SCALE | .0405 |

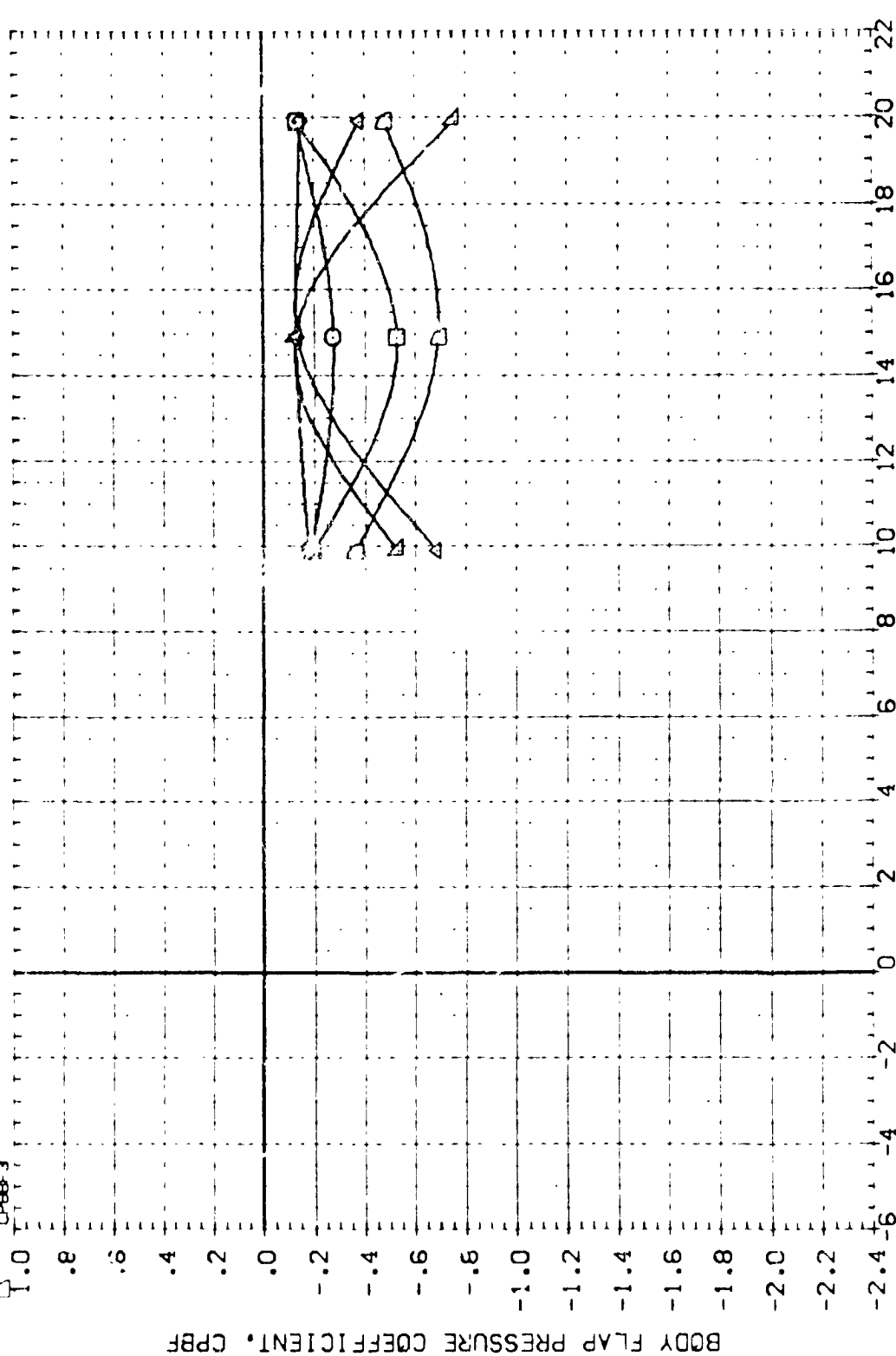


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BDFLAP

0A578 (NAAL 713) B16 C5 1 J42 W87 E18 (RDVZ61)

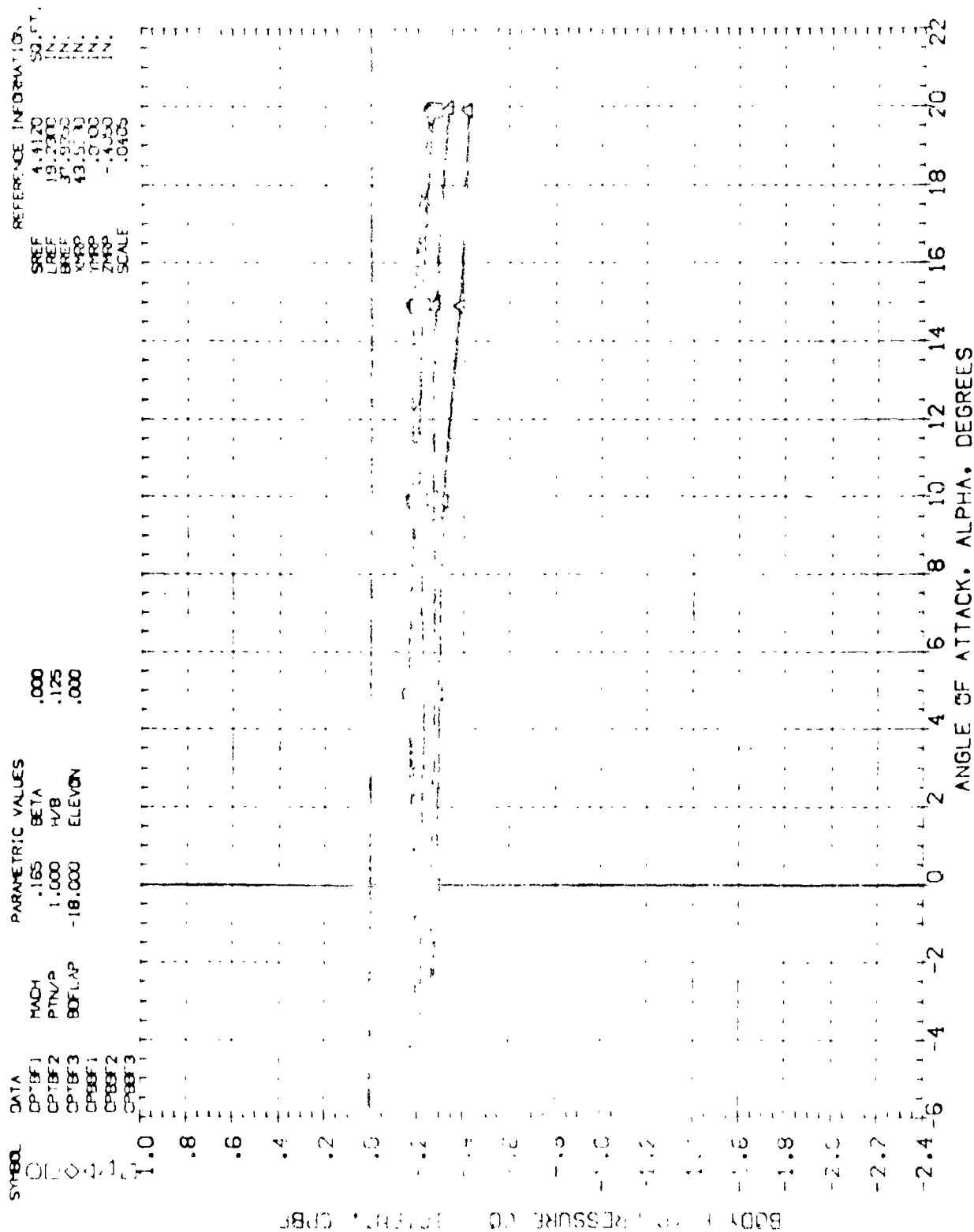


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BDFLAP

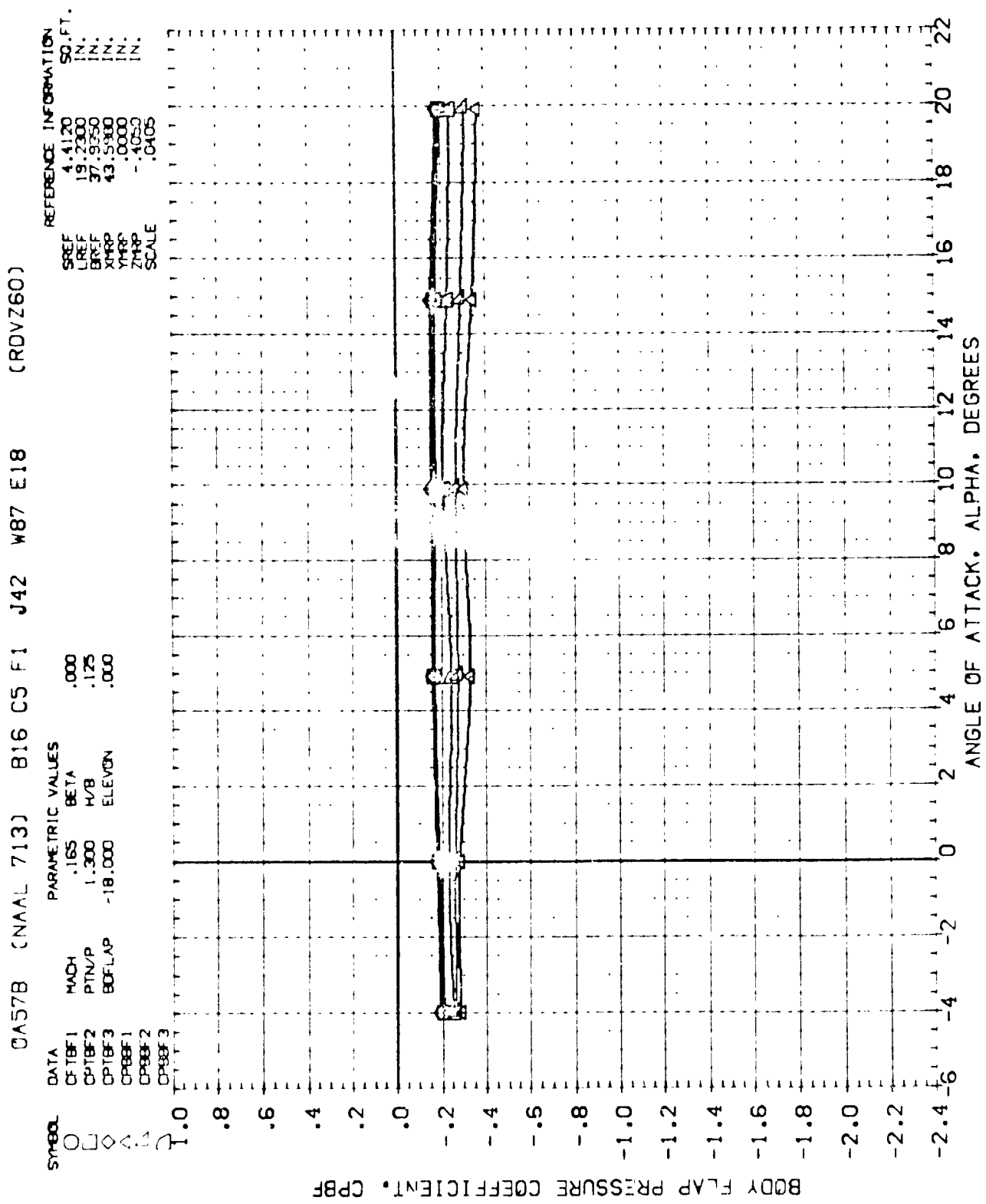


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BOFLAP

CA578 (NAAL 713) 816 C5 F1 J42 W87 E18 (RDVZ59)

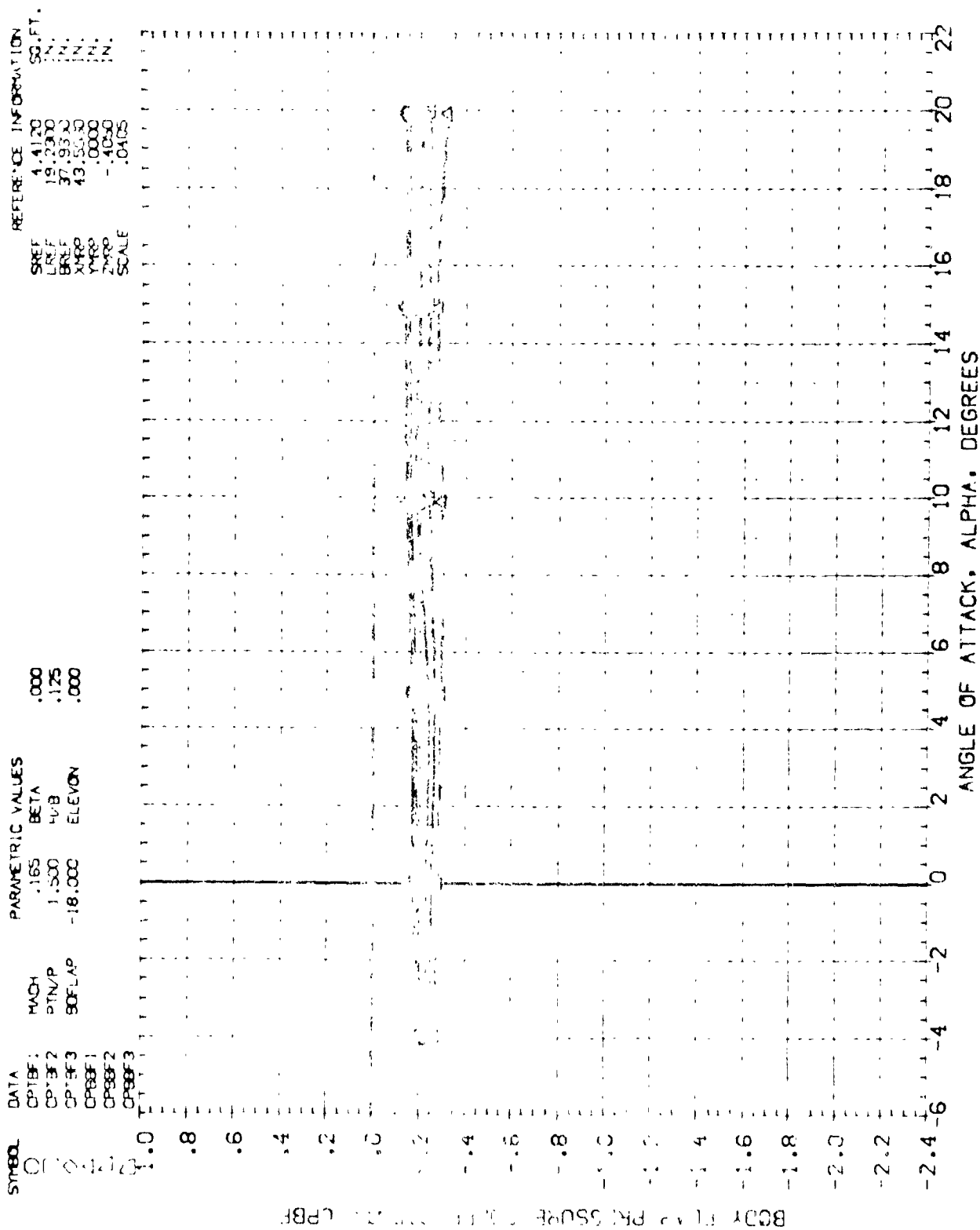


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42 0 ELEVON AND -18 EOFLAP

0A57B (NAAL 713) B16 C5 F1 J42 W87 E18 (RDVZ70)

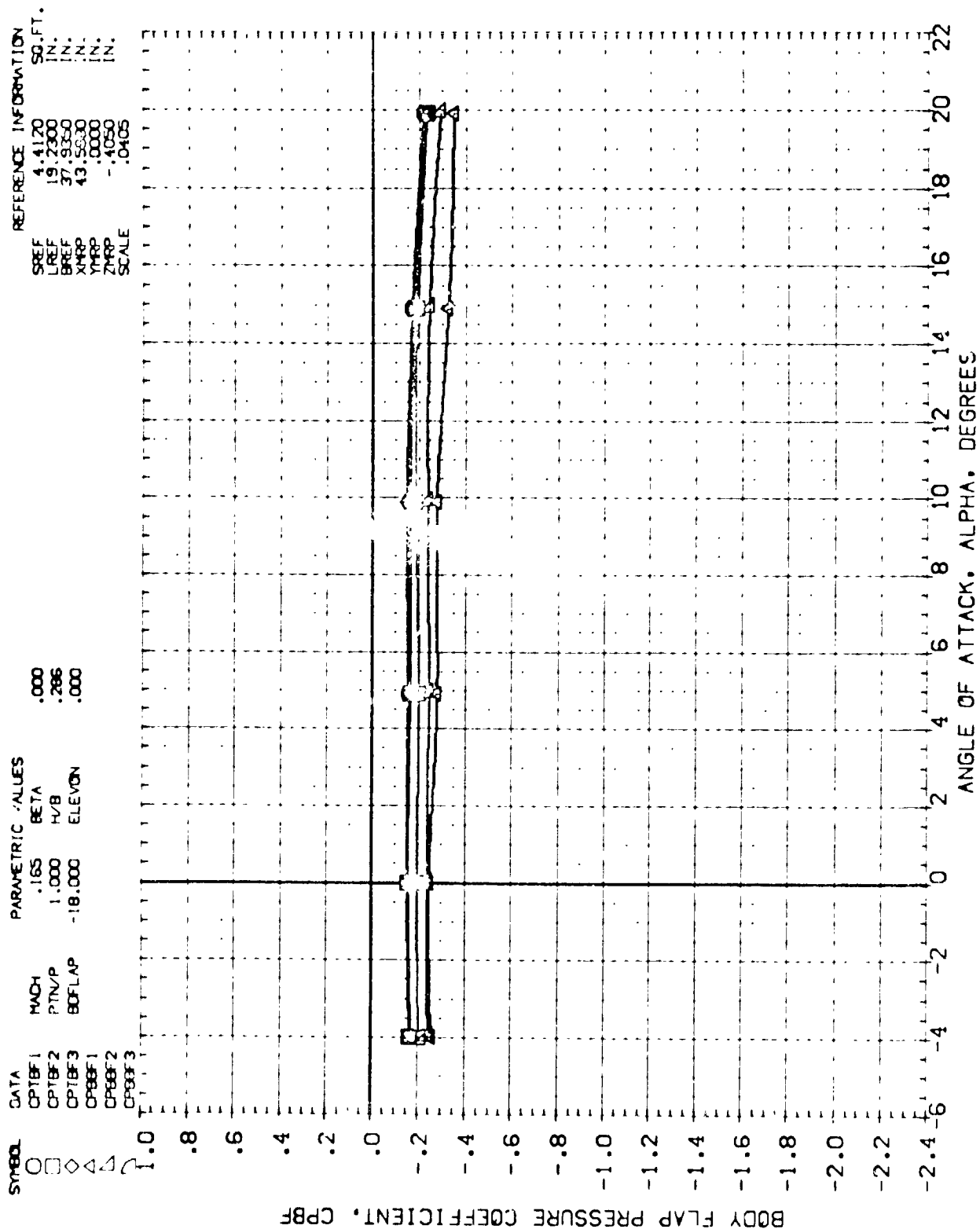


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BOFLAP

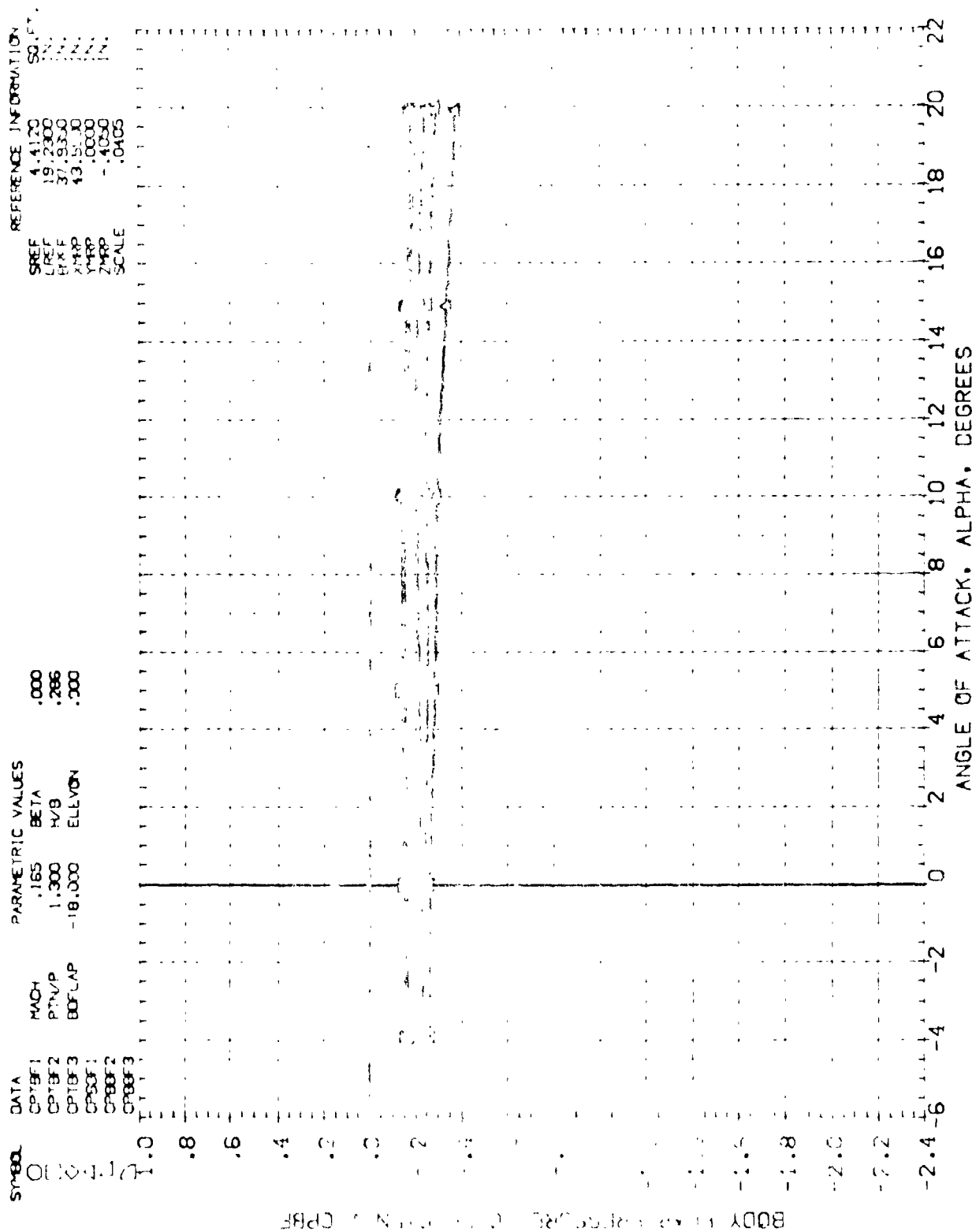


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BOFLAP

CA578 (NAAL 713) 816 C5 F1 J42 W87 E18 (RDVZ68)

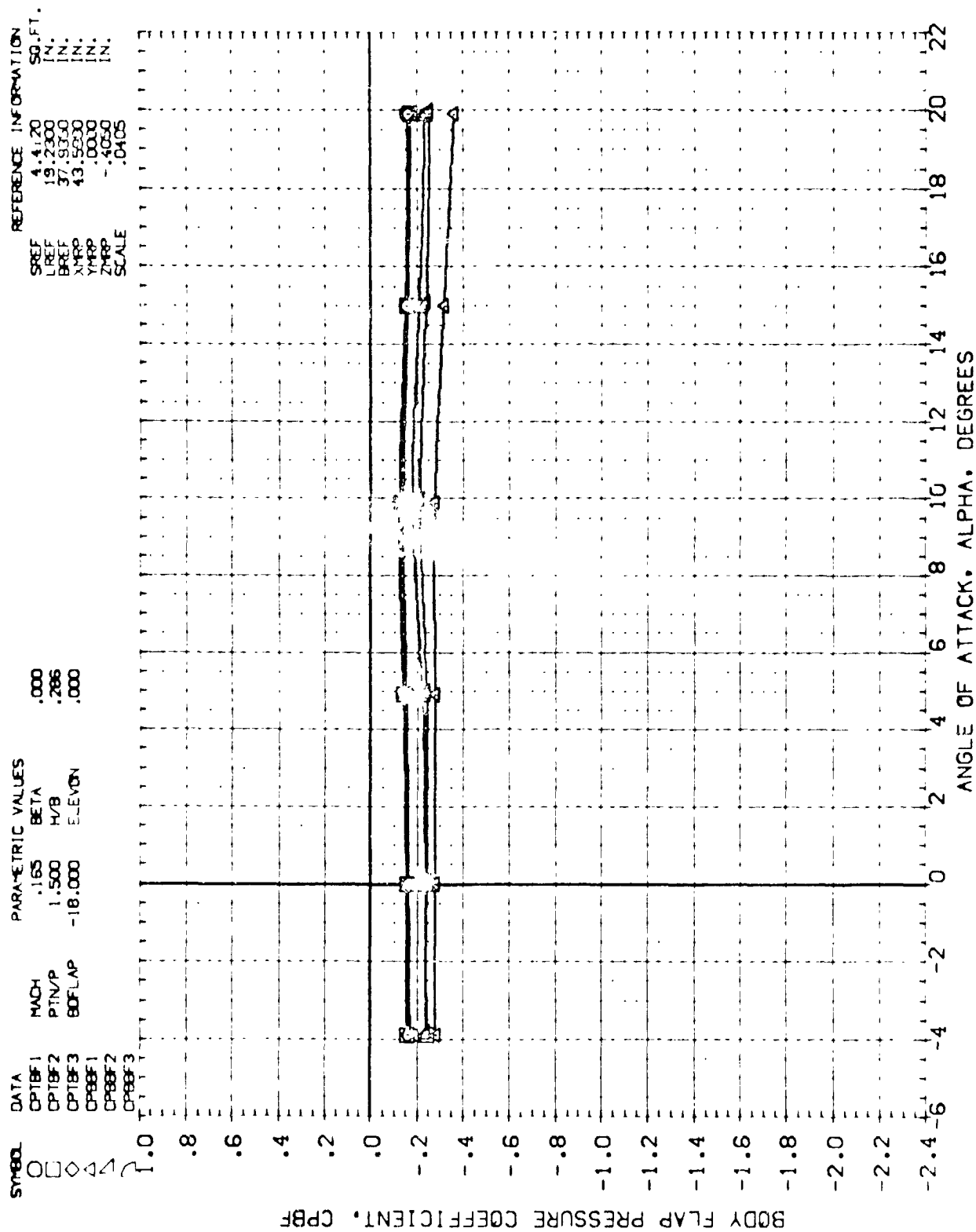


FIG. 24 BODY FLAP PRESSURE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BOFLAP

| | | | | | | | | |
|-----------------|----------------------------|-----|---------|---------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (HCV042) | QAS7B (NAAL 713) 816 CS FI | J40 | V87 E18 | -15.000 | .038 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (HCV043) | QAS7B (NAAL 713) 816 CS FI | J40 | V87 E18 | -15.000 | .038 | 1.300 | -18.000 | LREF 19.2700 IN. |
| (HCV046) | QAS7B (NAAL 713) 816 CS FI | J40 | V87 E18 | -15.000 | .038 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | | | XREF 43.5390 IN. |
| | | | | | | | | YREF .0000 IN. |
| | | | | | | | | ZREF -4.0500 IN. |
| | | | | | | | | SCALE .0405 |

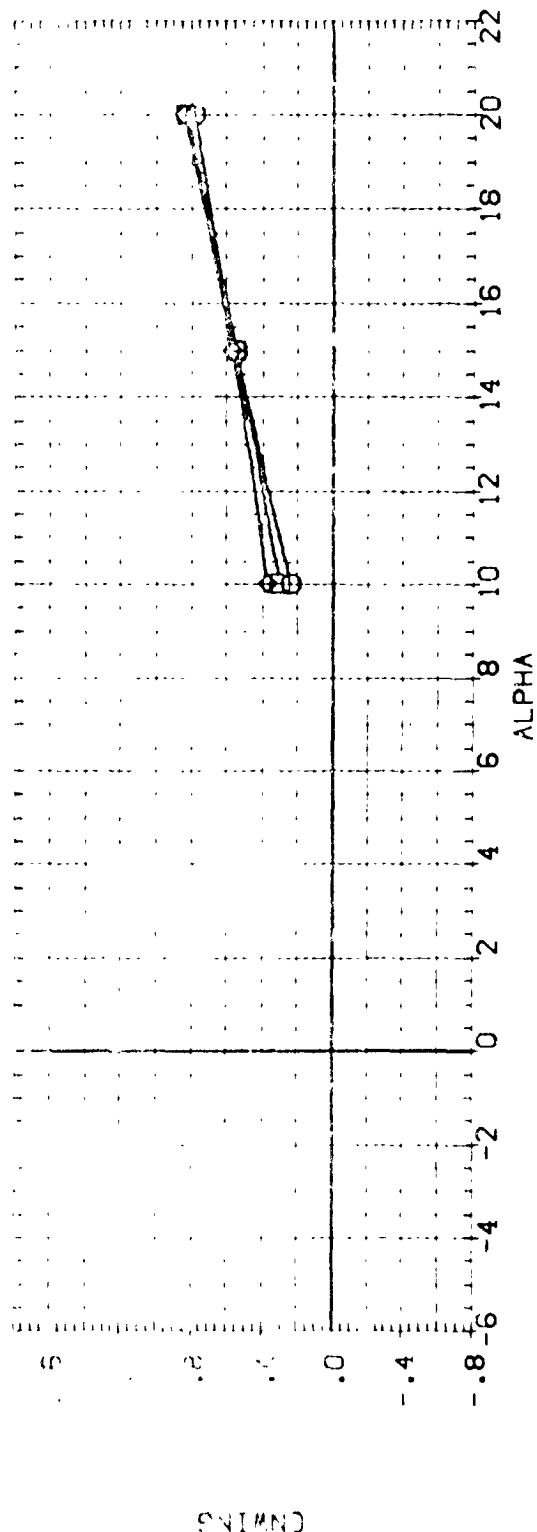
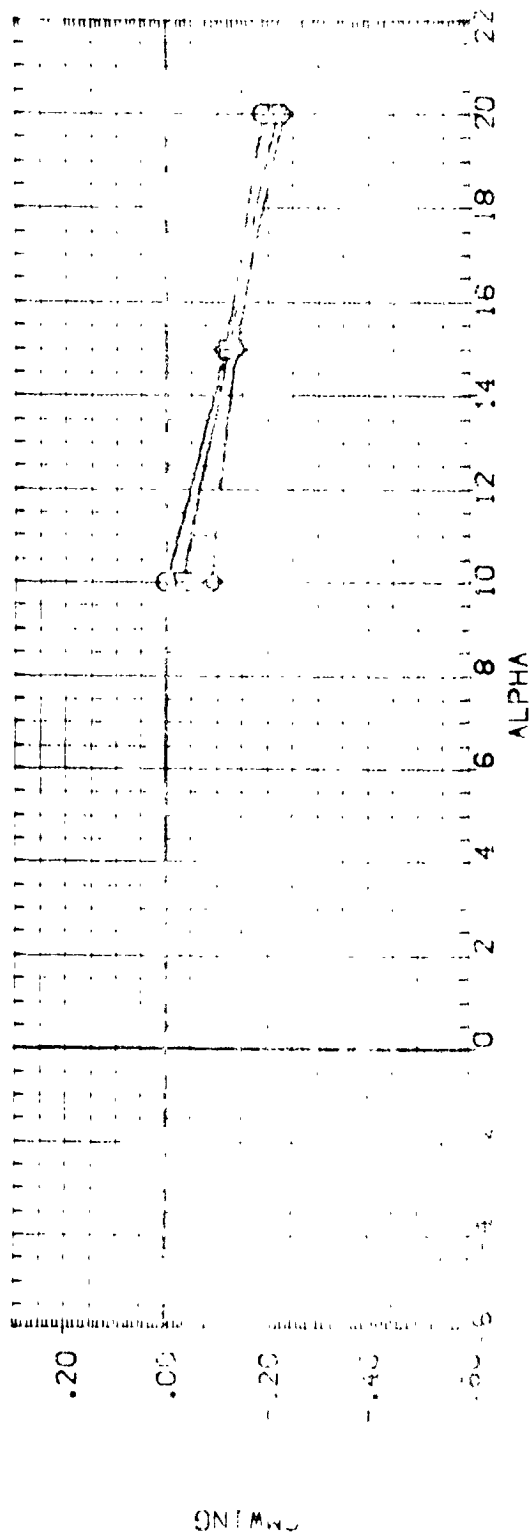


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BOFLAP
 (AJMACH = .20) PAGE 92



| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/S | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|--|---------|------|-------|---------|------------------------|
| [HOV042] | 0A578 (NAAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .038 | 1.000 | -18.000 | SREF 4.4120 50.FT. IN. |
| [HOV041] | 0A578 (NAAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .038 | 1.300 | -18.000 | LREF 19.2300 IN. |
| [HOV040] | 0A578 (NAAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .038 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XTRP 43.5880 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

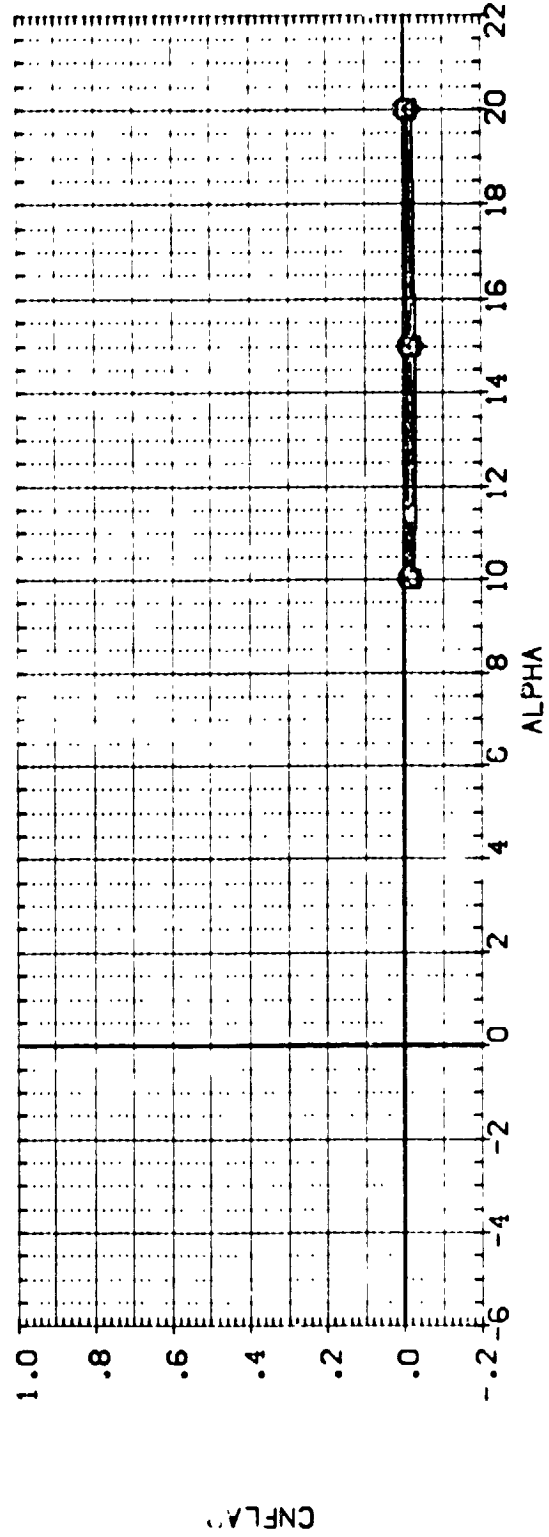
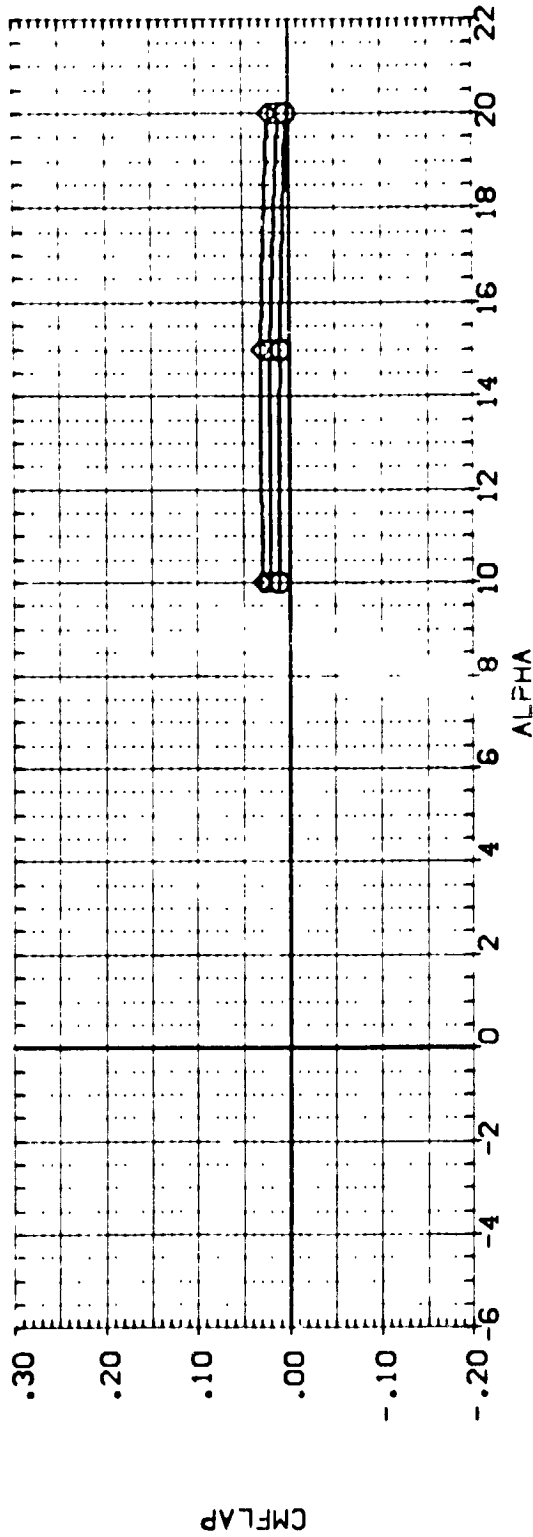


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40 • -15 ELEVON AND -18 BDFLAP

(A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | H/V8 | PTU/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----|---------|---------|------|-------|---------|-----------------------|
| (-C042) | 3A578 (NAL 713) 316 CS F1 | J40 | V87 E18 | -15.000 | .039 | 1.000 | -18.000 | SREF 4.420 93.47 |
| (-C041) | 3A578 (NAL 713) 316 CS F1 | J40 | V87 E18 | -15.000 | .039 | 1.300 | -18.000 | LREF 19.270 IN. |
| (-C040) | 3A578 (NAL 713) 316 CS F1 | J40 | V87 E18 | -15.000 | .039 | 1.500 | -18.000 | BREF 37.930 IN. |
| | | | | | | | | XREF 43.590 IN. |
| | | | | | | | | YREF 10.000 IN. |
| | | | | | | | | ZREF -4.050 IN. |
| | | | | | | | | SCALE .0405 |

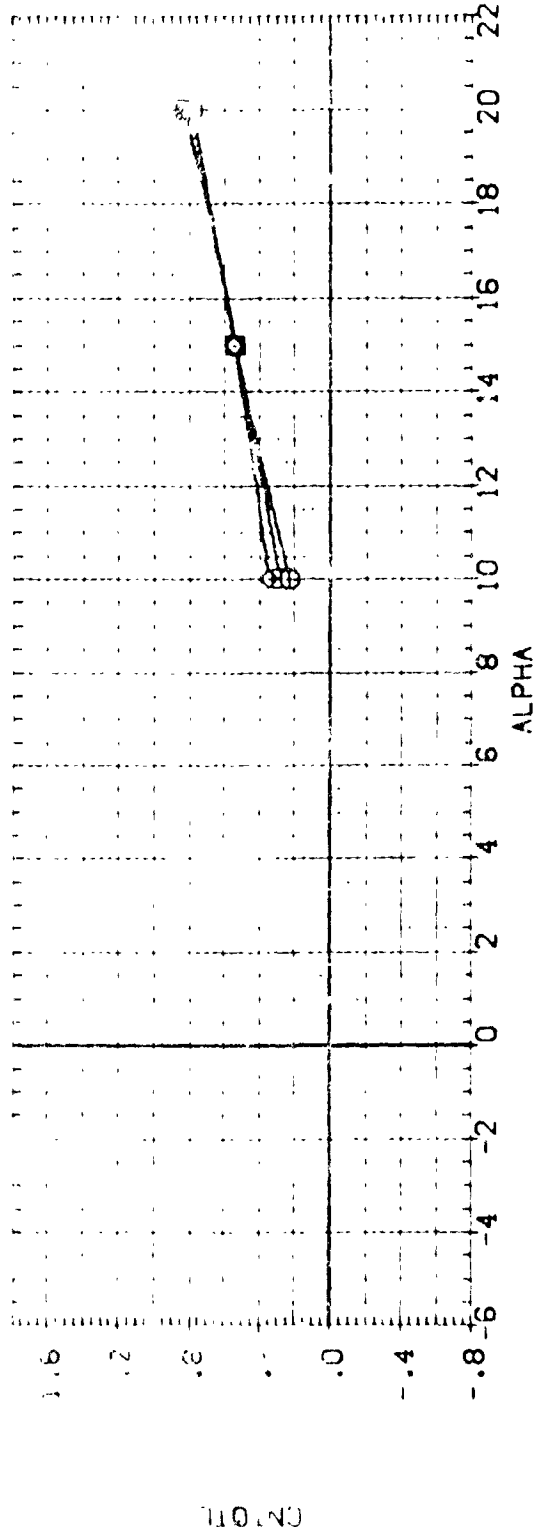
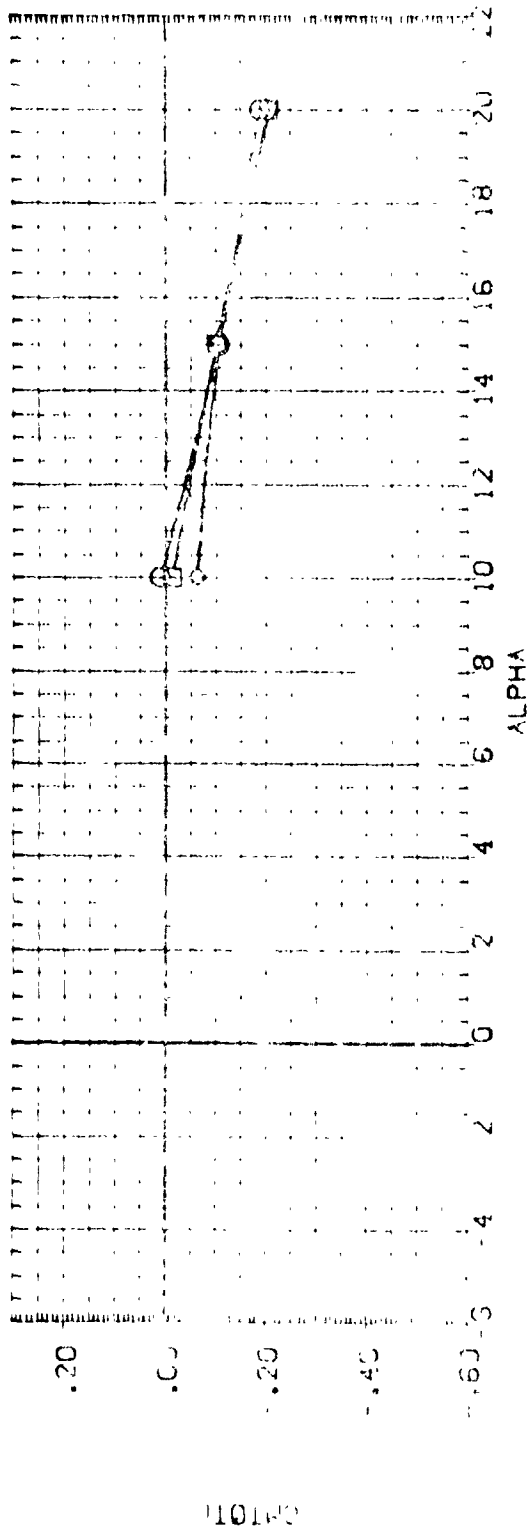


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BOFLAP
(A)MACH = .20 PAGE 94

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTV/P | BOFLAP | REFERENCE INFORMATION |
|----------|--------|--|---------|------|-------|---------|-----------------------|
| (FDV045) | □ | QAS78 (NAAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV044) | □ | QAS78 (NAAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDV043) | ◇ | QAS78 (NAAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .125 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | | XREF 43.5930 IN. |
| | | | | | | | YREF .0000 IN. |
| | | | | | | | ZREF -.4050 IN. |
| | | | | | | | SCALE .0405 |

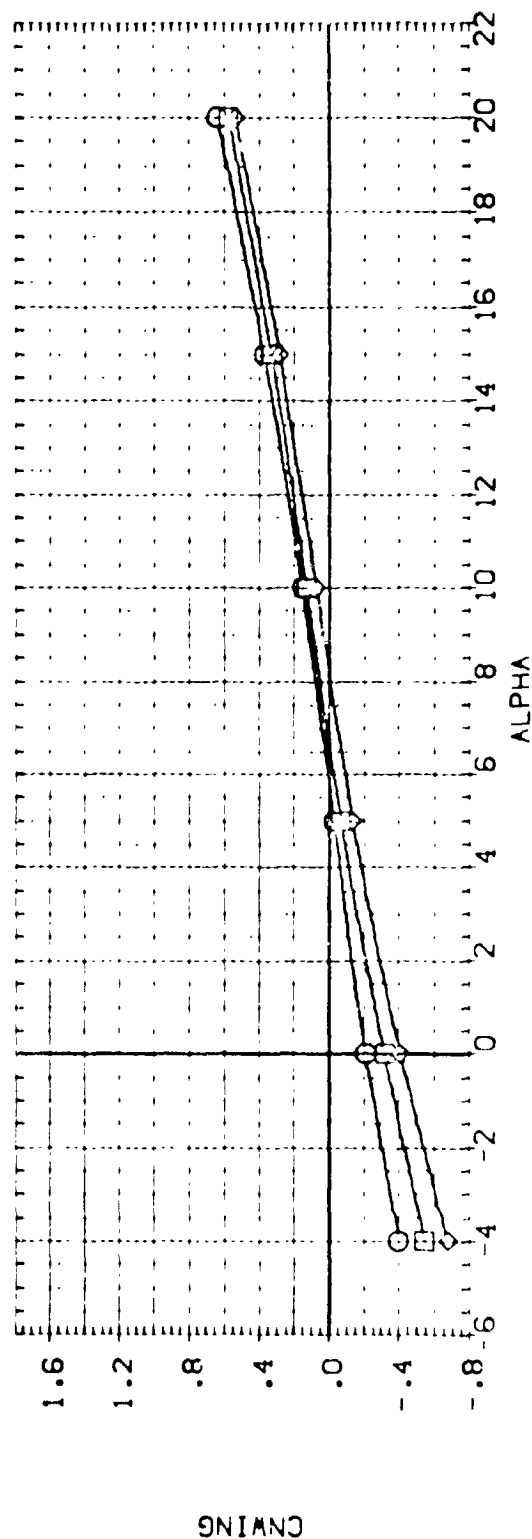
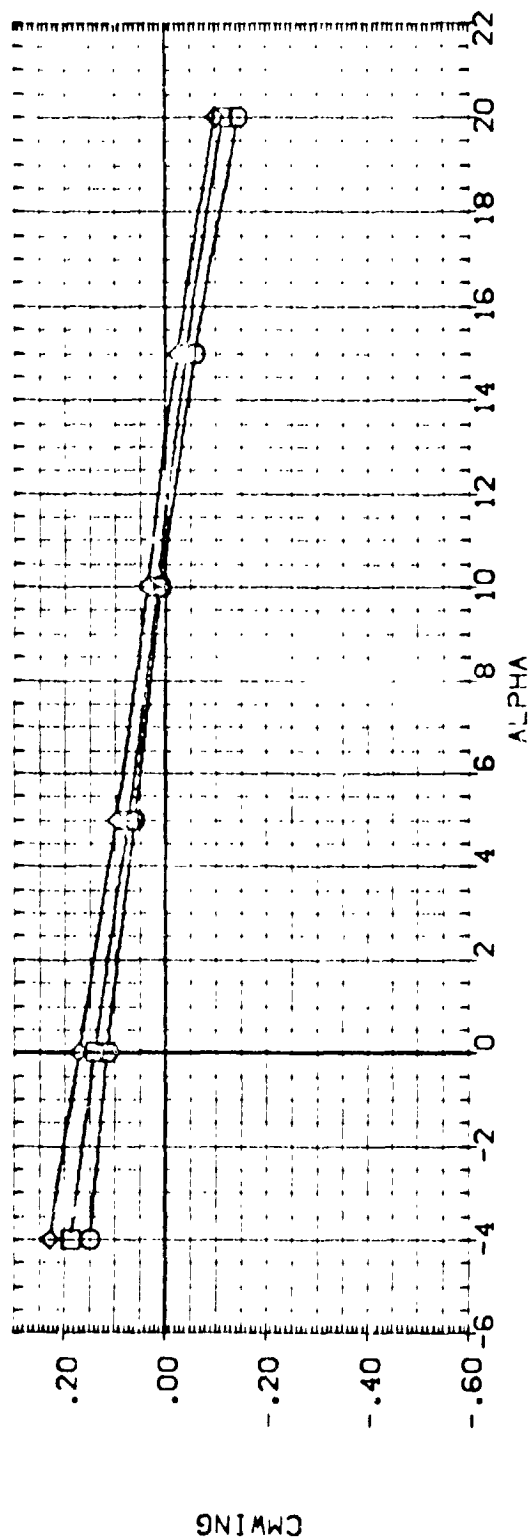


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40 , 15 ELEVON AND -18 BOFLAP

DATA SET SYMBOL CONFIGURATION DESCRIPTION

| DATA SET SYMBOL | CONFIGURATION | DESCRIPTION | ELEVON | HVB | PTNP | BOFLAP | REFERENCE INFORMATION |
|-----------------|-----------------|-------------|---------|------|------|---------|-----------------------|
| (F20045) | QAS7B (NAL 7.3) | 816 CS F1 | -15.000 | .125 | .000 | -18.000 | SREF 4.4120 SQ.FT |
| (F20044) | QAS7B (NAL 7.3) | 816 CS F1 | -15.000 | .125 | .300 | -18.000 | LINE 19.2700 IN. |
| (F20043) | QAS7B (NAL 7.3) | 816 CS F1 | -15.000 | .125 | .500 | -18.000 | ORF 37.6740 IN. |
| | | | | | | | XTRP 43.0000 IN. |
| | | | | | | | YTRP .0000 IN. |
| | | | | | | | ZTRP -40.000 IN. |
| | | | | | | | SCALE .0405 |

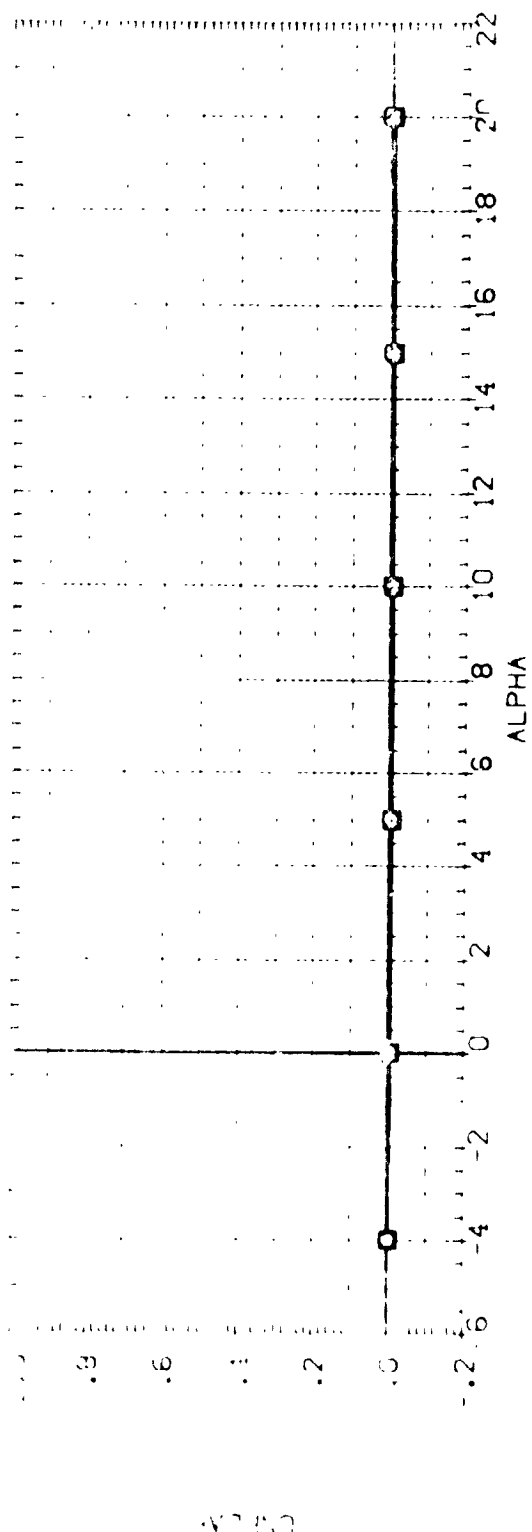
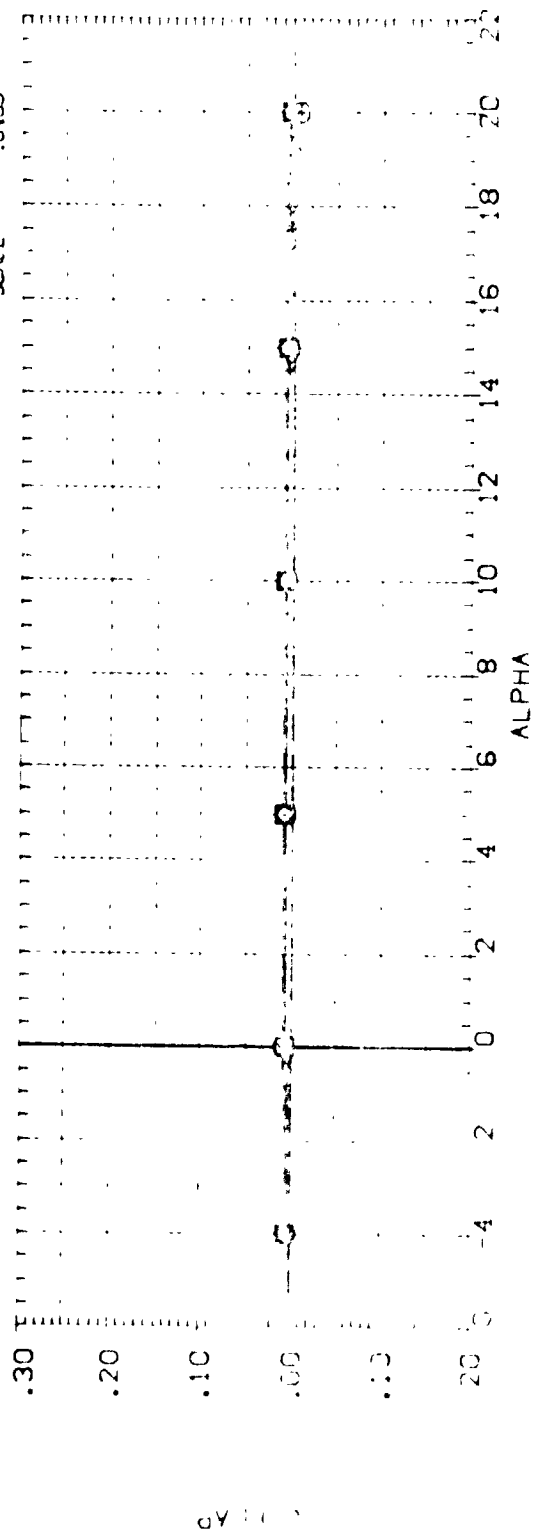


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BOFLAP



DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | HVB | PTNP | BOFLAP | REF | SO.FT. |
|-----------------|--------------------------------------|---------|------|-------|---------|-------|---------|
| (FDV045) | Q57B (NAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .125 | 1.000 | -18.000 | SREF | 4.4120 |
| (FDV044) | Q57B (NAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .125 | 1.300 | -18.000 | LREF | 19.2300 |
| (FDV043) | Q57B (NAL 713) B16 CS F1 J40 V87 E18 | -15.000 | .125 | 1.500 | -18.000 | BREF | 37.9350 |
| | | | | | | YMRP | 43.5900 |
| | | | | | | YMRP | .0000 |
| | | | | | | ZMRP | -1.0050 |
| | | | | | | SCALE | .0405 |

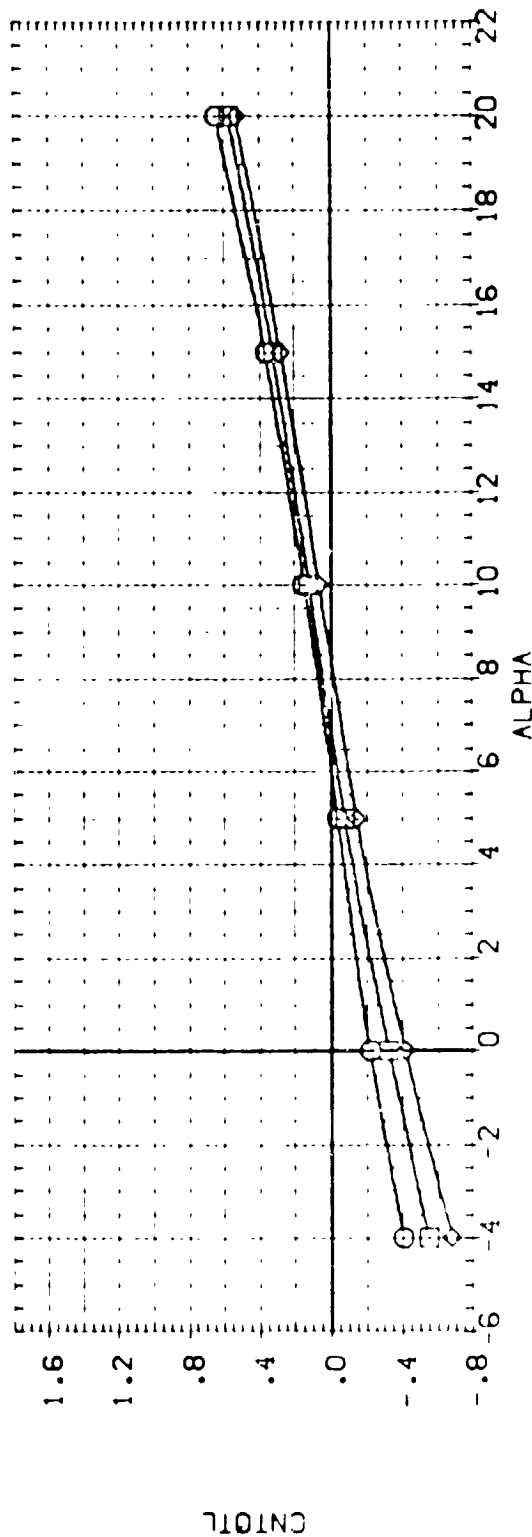
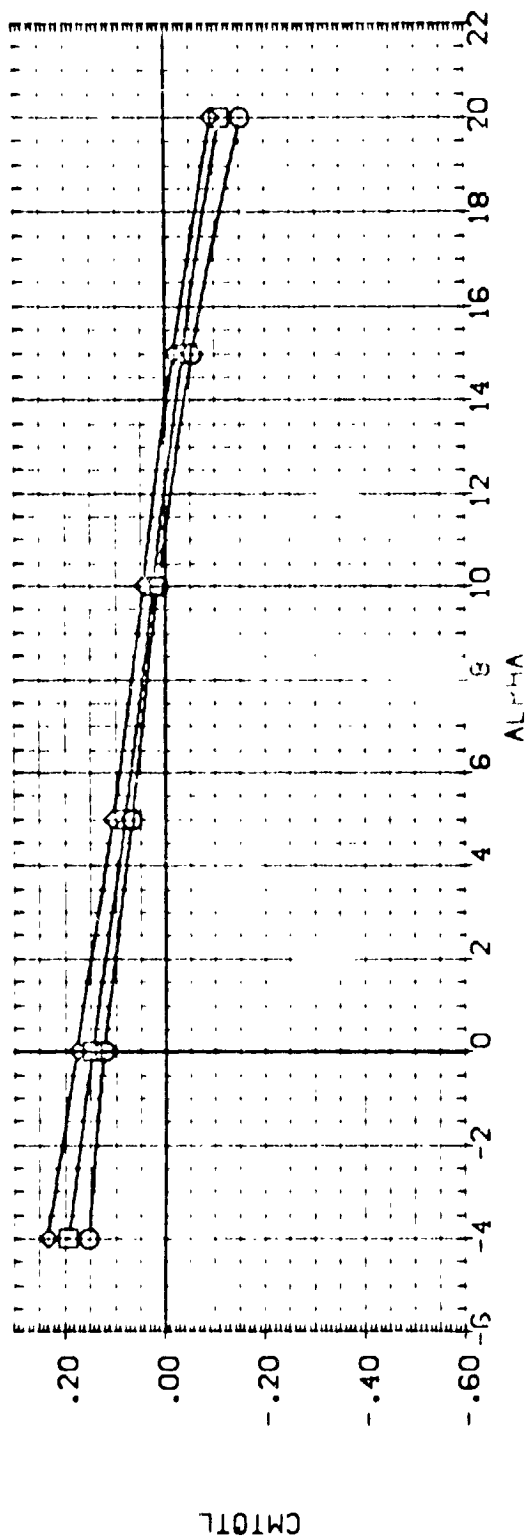


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BOFLAP
 (A)MACH = 0.7

SET SYMBOL CONFIGURATION DESCRIPTION
 (1) 239 (VAL 713) 916 CS F1 40 V87 E18
 (2) 238 (VAL 713) 916 CS F1 40 V87 E18
 (3) 237 (VAL 713) 916 CS F1 40 V87 E18
 REFERENCE INFORMATION
 SHEET 4.420
 LRF 19.237
 BFL 37.172
 A180 43.540
 A180 0.000
 A180 -4.050
 SCALE .0405

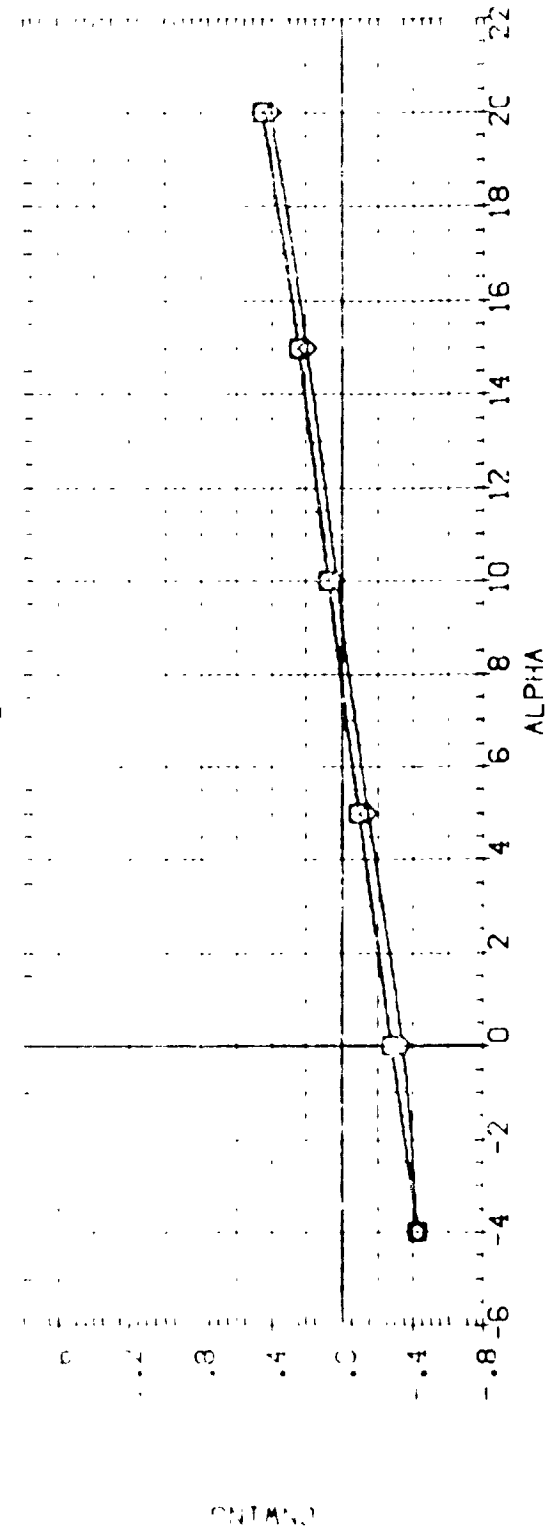
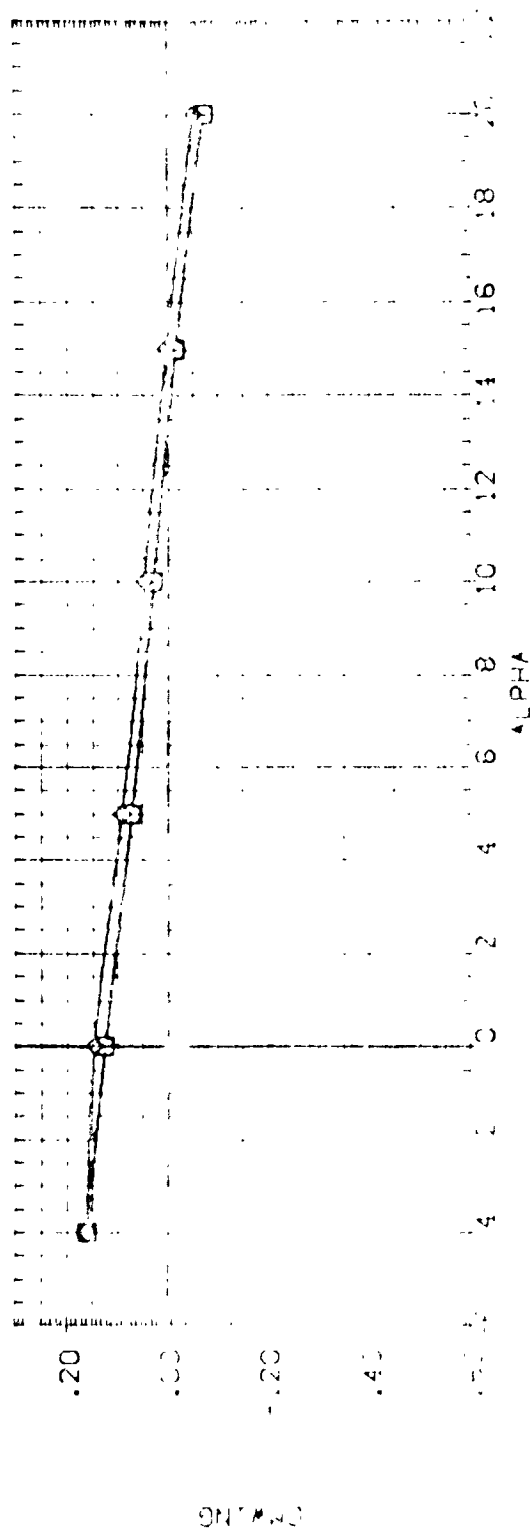


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40, -15 ELEVON AND -18 BOFLAP
 (M)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | H/V8 | PTM/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|-----------|---------|------|-------|---------|-----------------------|
| (YDV038) | MA57B (NAAL 713) | 816 C5 F1 | 816 C5 F1 | -15.000 | .286 | 1.000 | -18.000 | SREF 4.4120 50.FT. |
| (FDV038) | MA57B (NAAL 713) | 816 C5 F1 | 816 C5 F1 | -15.000 | .286 | 1.300 | -18.000 | LREF 19.2700 IN. |
| (FDV037) | MA57B (NAAL 713) | 816 C5 F1 | 816 C5 F1 | -15.000 | .286 | 1.500 | -18.000 | SREF 37.6340 IN. |
| | | | | | | | | XREF 43.5000 IN. |
| | | | | | | | | YREF .0000 IN. |
| | | | | | | | | ZREF -.4000 IN. |
| | | | | | | | | SCALE .0405 |

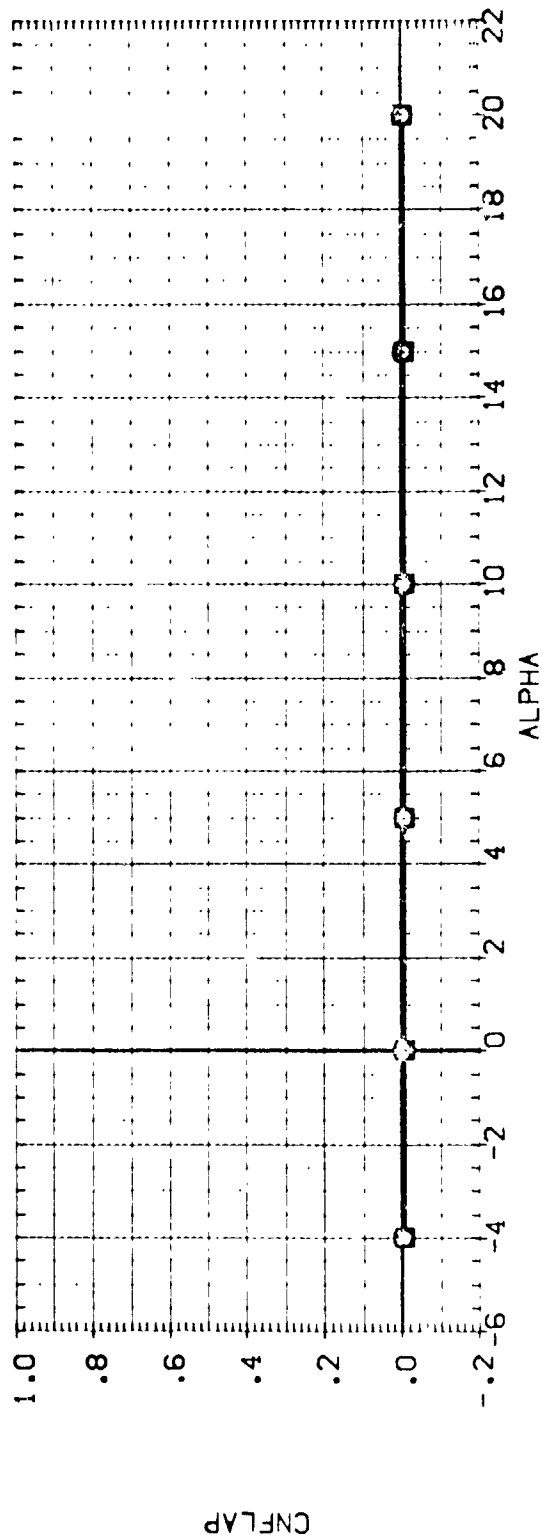
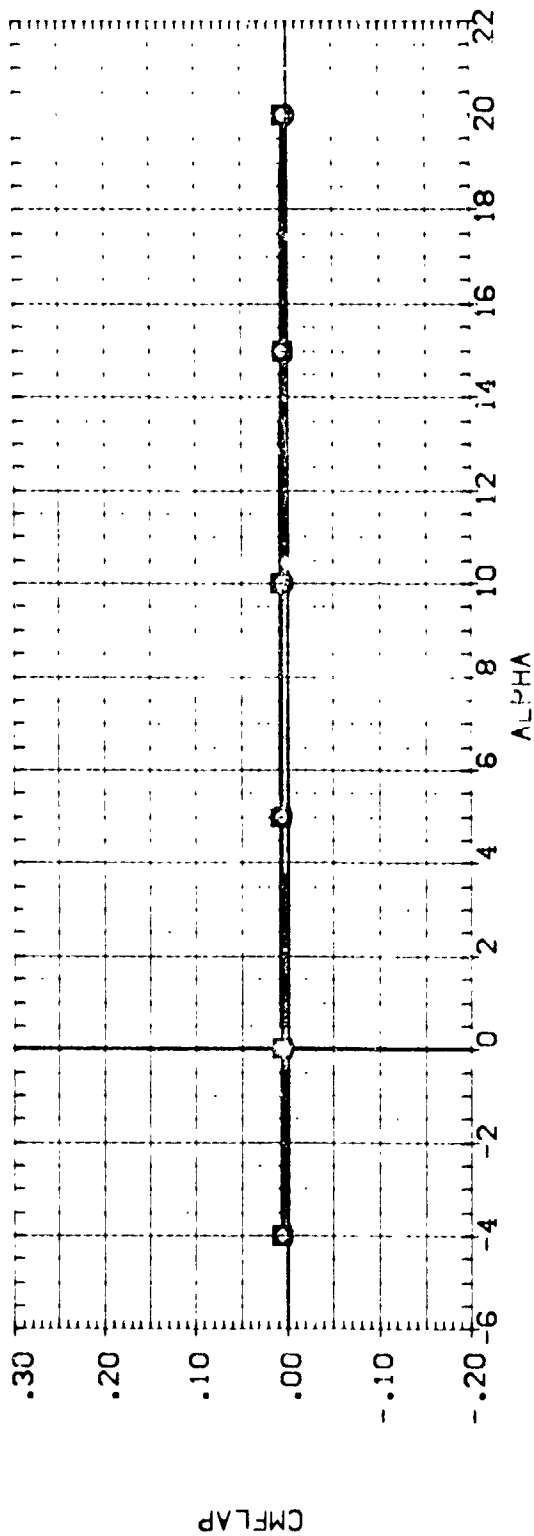


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40 , -15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|----------------------------|---------|------|-------|---------|-----------------------|
| (YUVC38) | QAS7B (NAAL 713) B16 CS F1 | -15.000 | .286 | 1.000 | -18.000 | SRC 4.400 |
| (YUVC38) | QAS7B (NAAL 713) B16 CS F1 | -15.000 | .286 | 1.300 | -18.000 | REF 9.200 |
| (YUVC38) | QAS7B (NAAL 713) B16 CS F1 | -15.000 | .286 | 1.500 | -18.000 | REF 9.200 |
| | | | | | | YPR 43.500 |
| | | | | | | ZPR 0.000 |
| | | | | | | ZMRP -4.500 |
| | | | | | | SCALE .0105 |

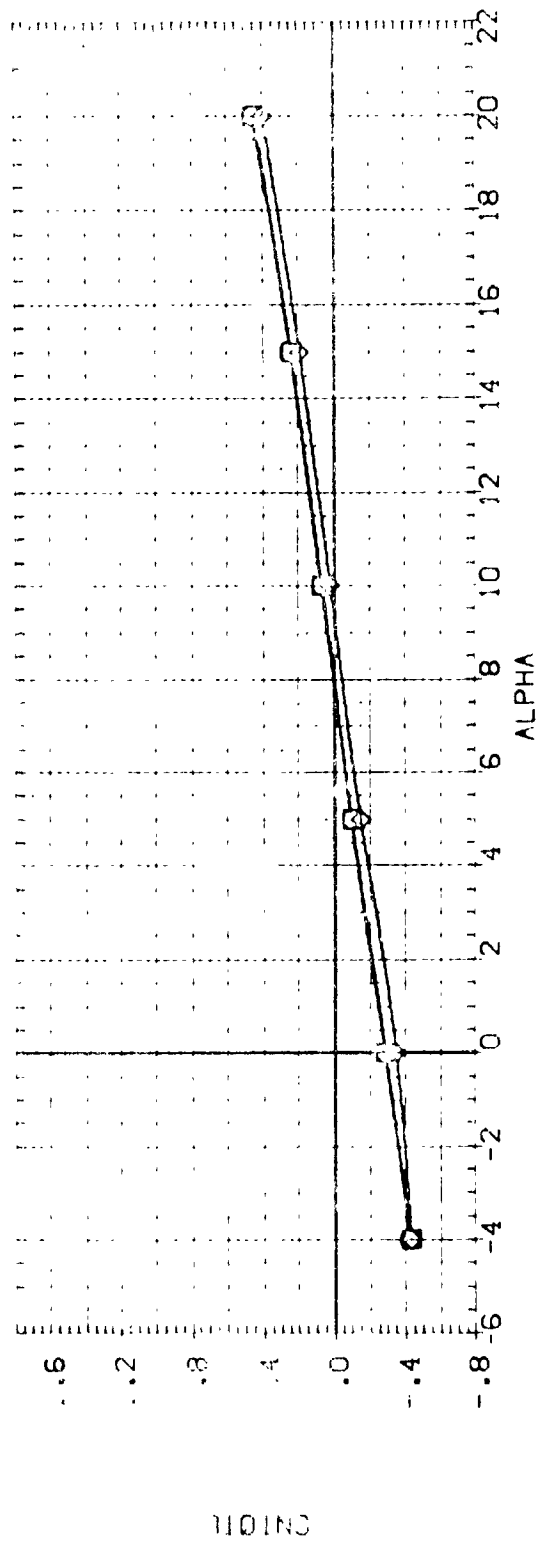
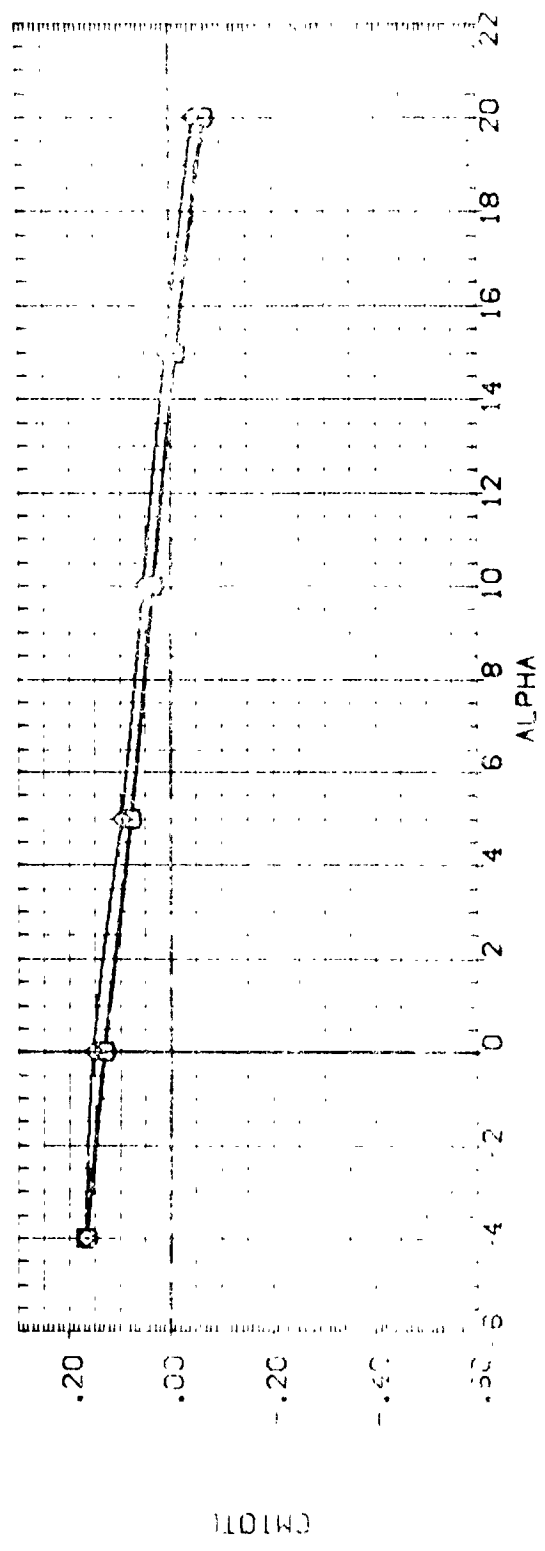


FIG. 25 INTEGRATED FORCE COEFFICIENTS WITH J40 , -15 ELEVON AND -18 BDFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| [HOV003] | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .038 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| [HOV004] | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .038 | 1.300 | -18.000 | LREF 19.2300 IN. |
| [HOV005] | QAS7B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .038 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XMRP 43.5530 IN. |
| | | | | | | YMRP .0000 IN. |
| | | | | | | ZMRP -.4050 IN. |
| | | | | | | SCALE .0405 |

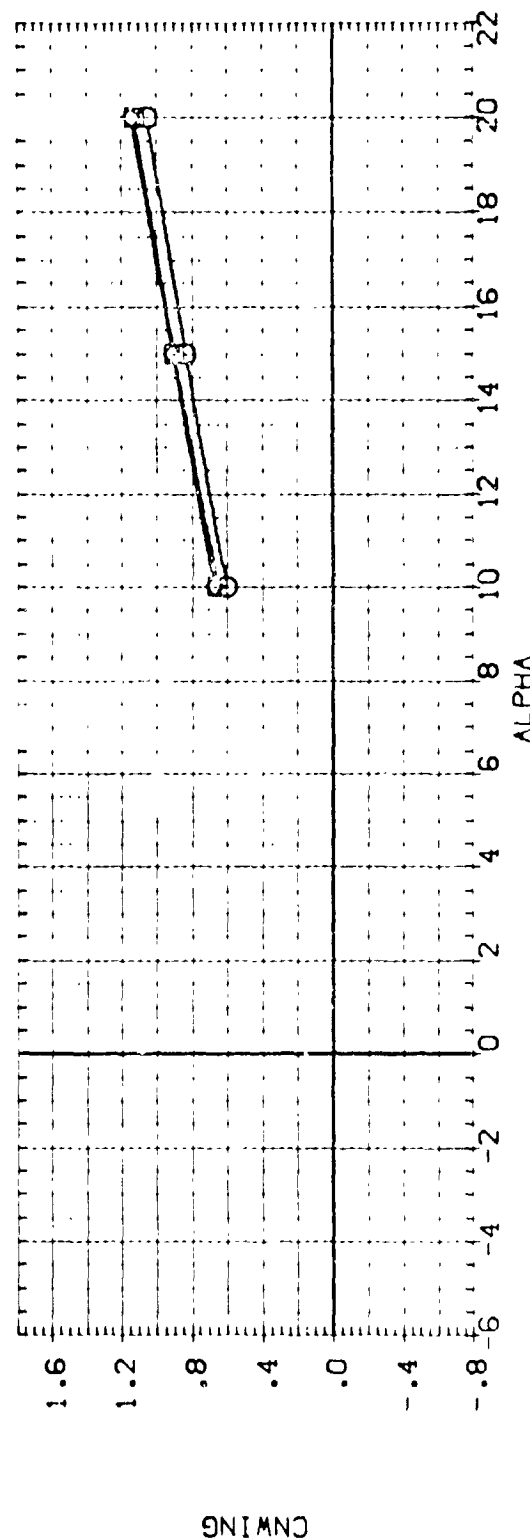
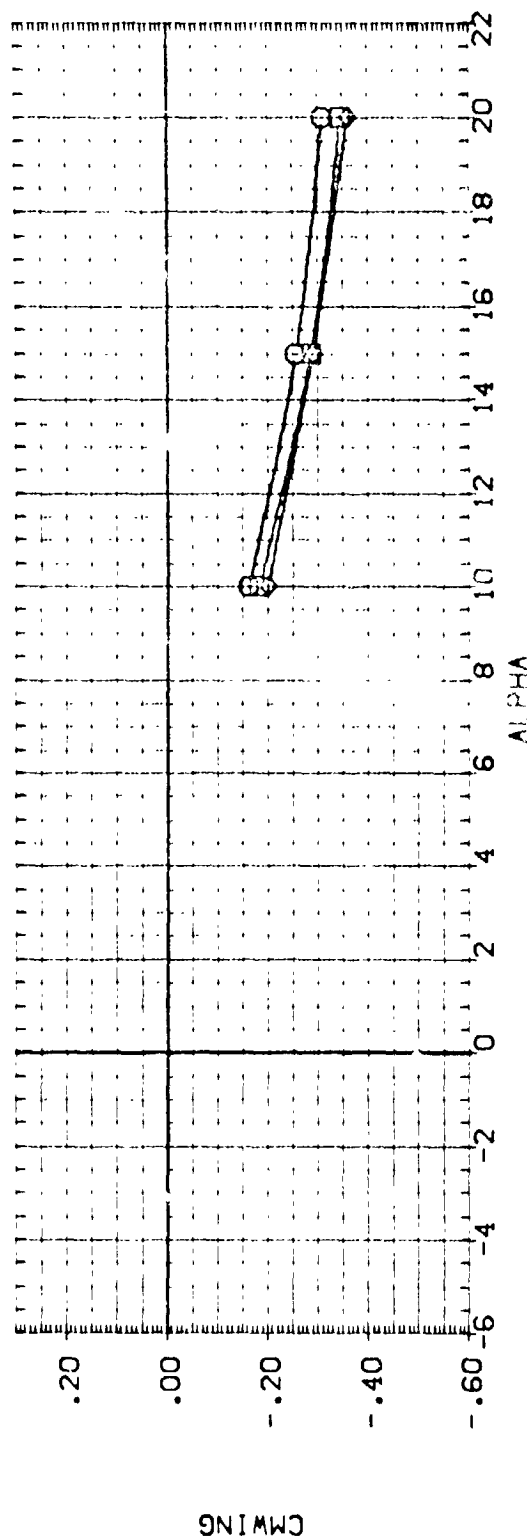


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | HVB | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|---------|---------|------|-------|---------|-----------------------|
| (H07003) | 0A578 (NAL 713) | 816 CS F1 | J40 | V87 E18 | .038 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (H07004) | 0A578 (NAL 713) | 816 CS F1 | J40 | V87 E18 | .038 | 1.300 | -18.000 | LREF 19.1300 IN. |
| (H07005) | 0A578 (NAL 713) | 816 CS F1 | J40 | V87 E18 | .038 | 1.500 | -18.000 | BREF 37.9400 IN. |
| | | | | | | | | XREF 43.5000 IN. |
| | | | | | | | | YREF .0000 IN. |
| | | | | | | | | ZREF -4.0000 IN. |
| | | | | | | | | SCALE .0400 |

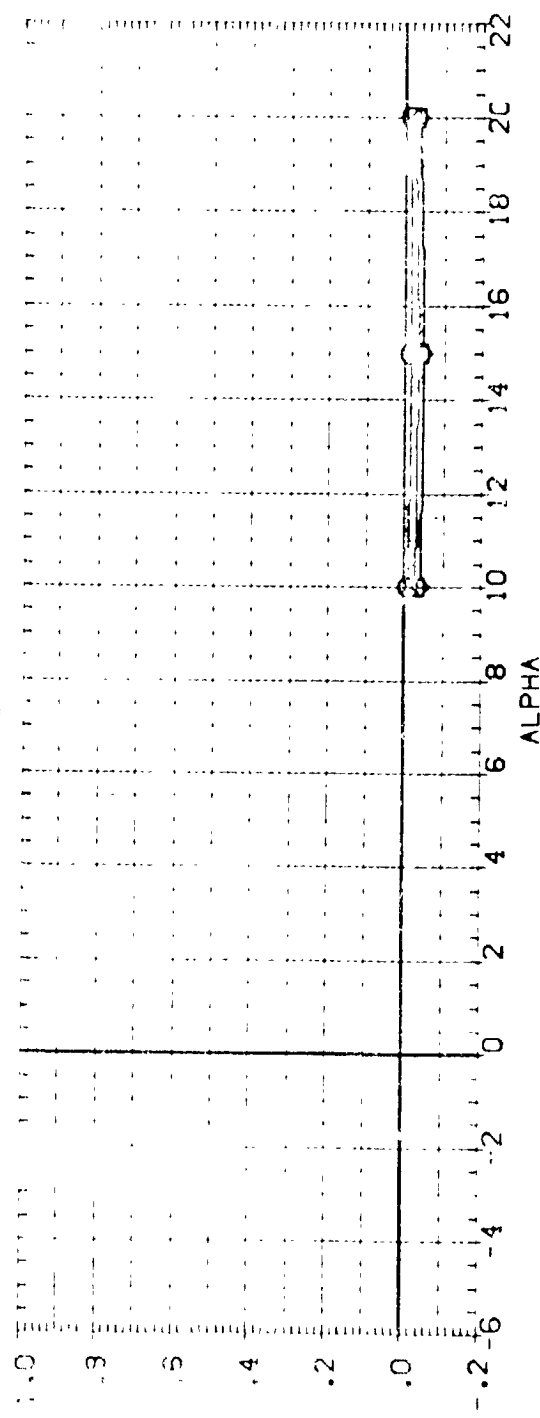
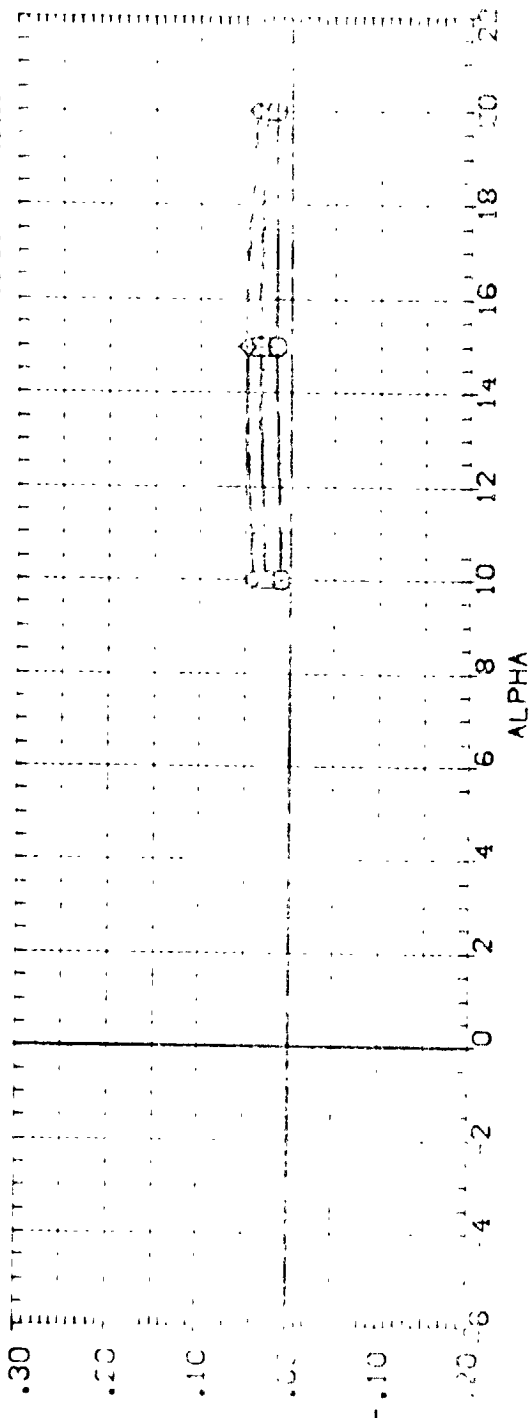


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/R | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|------------------------|
| (HOV003) | QAS78 (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .038 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. IN. |
| (HOV004) | QAS78 (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .038 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (HOV005) | QAS78 (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .038 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XREF 43.5500 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF .4050 IN. |
| | | | | | | SCALE .0405 |

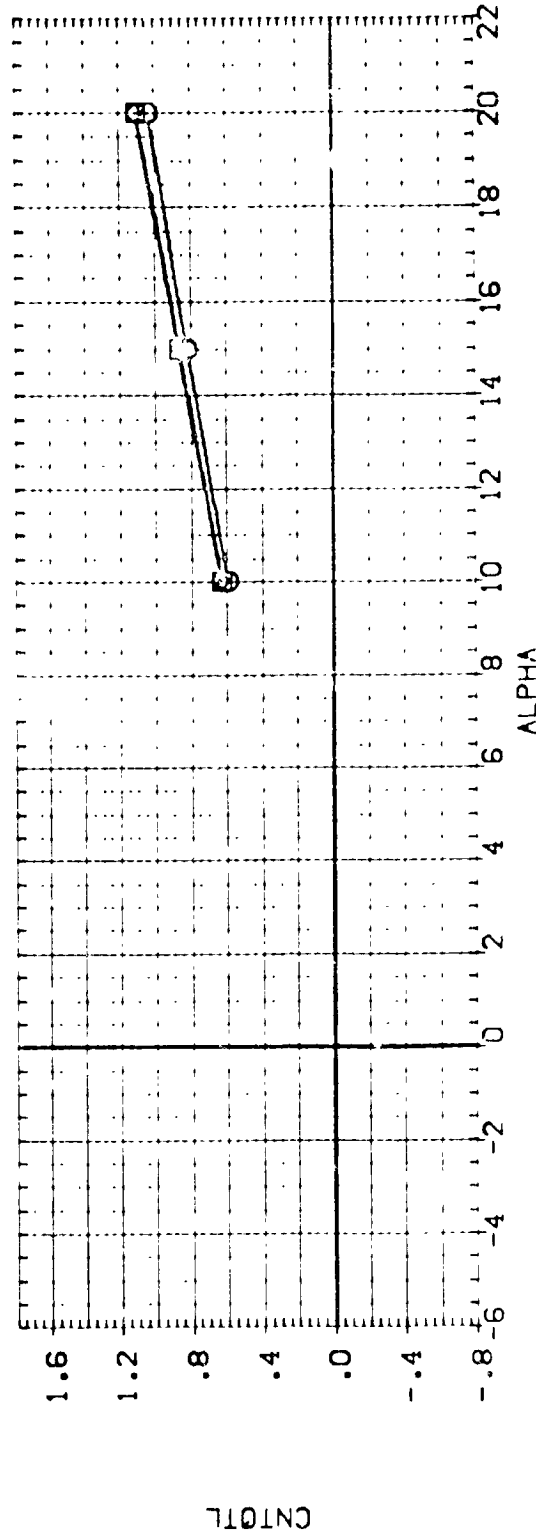
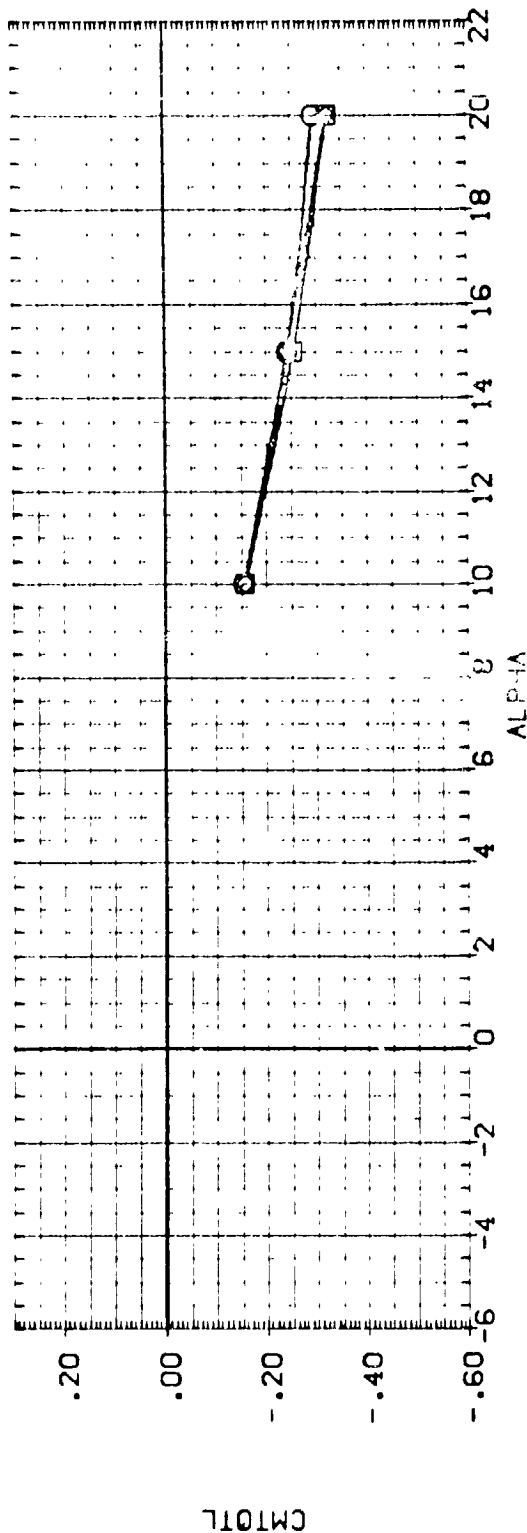


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP
(A) MACH = .20

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | 3/FLAP | REFERENCE INFORMATION |
|----------|--------|--|--------|-----|-------|---------|-----------------------|
| (EC:206) | Q | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .25 | 1.000 | -18.000 | SREF 4.4120 52.0 FT. |
| (EC:007) | Q | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .25 | 1.300 | -18.000 | LREF 19.2310 IN. |
| (EC:008) | Q | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .25 | 1.500 | -18.000 | BREF 37.5310 IN. |
| | | | | | | | YREF 43.5310 IN. |
| | | | | | | | ZREF .0310 IN. |
| | | | | | | | SCALE .0415 |

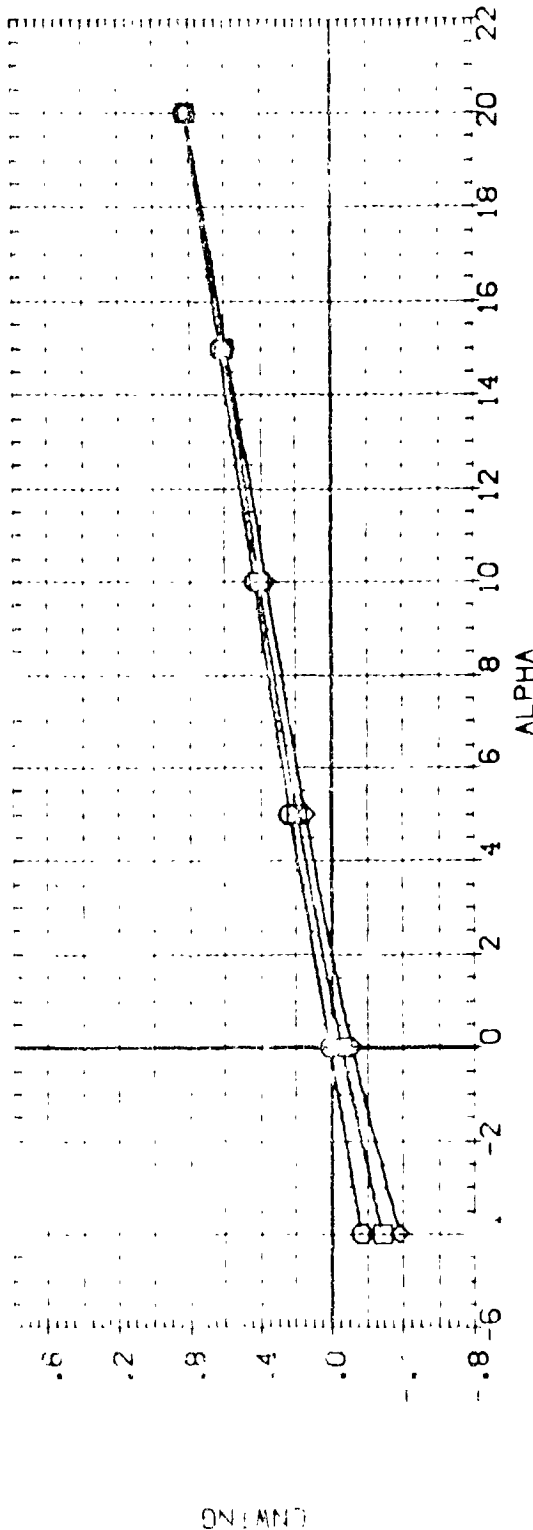
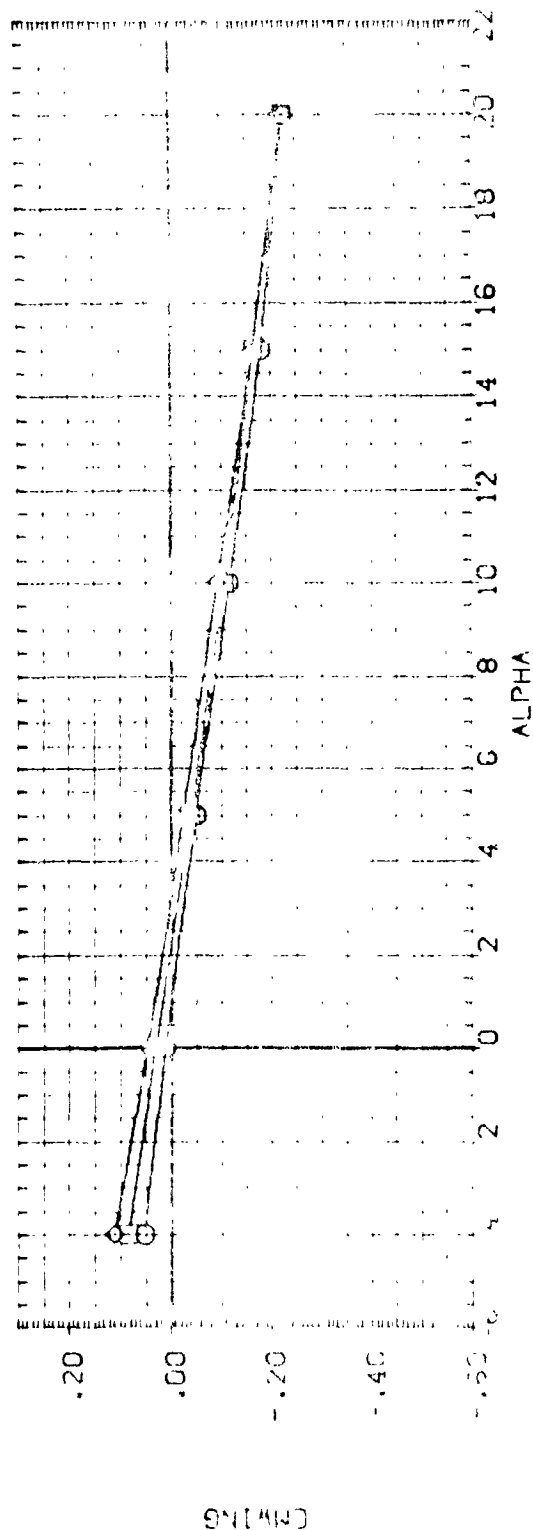


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP
 (A)MACH = .20 PAGE 104



| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (EDV006) | 0A578 (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (EDV007) | 0A578 (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (EDV008) | 0A578 (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .125 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | YREF 43.5030 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

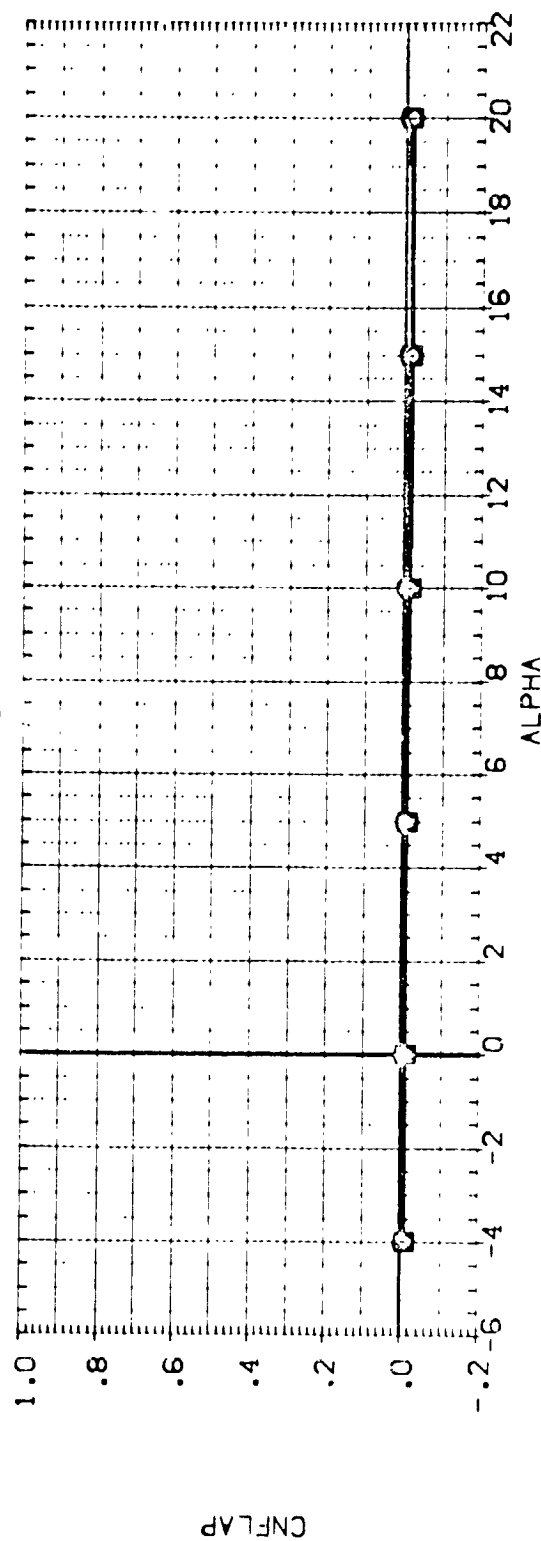
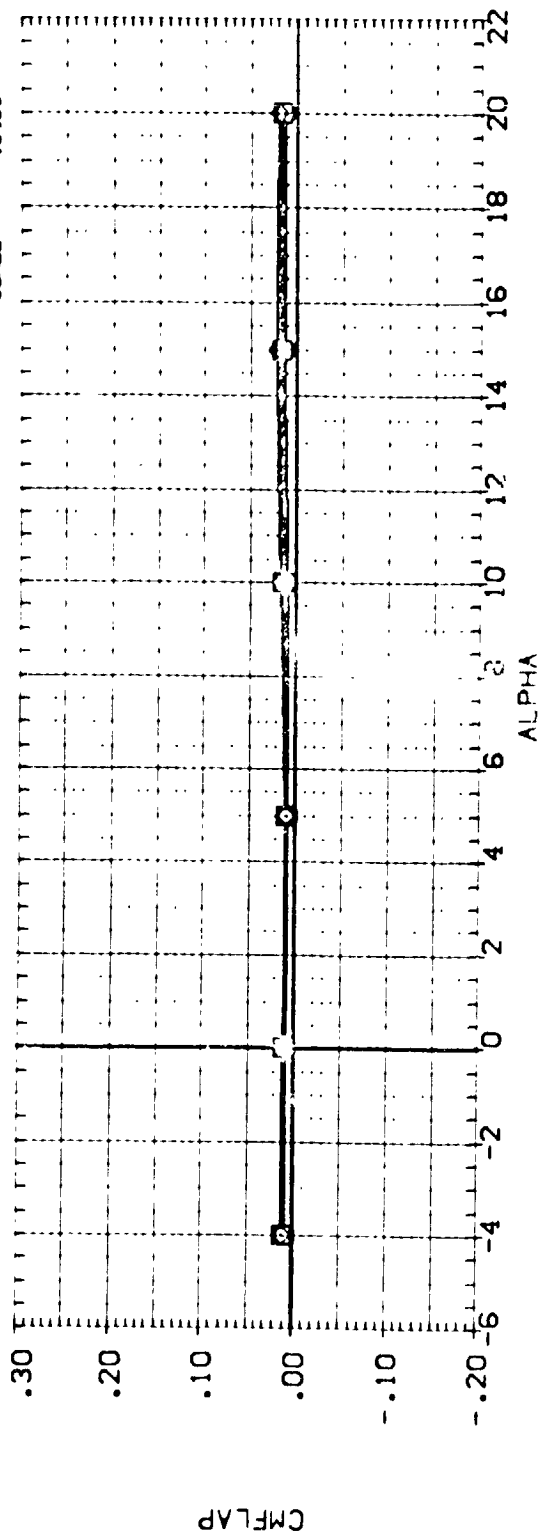


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 3DFLAP
 (A)MAC = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| 0457B (NAL 713) | 816 CS F1 | .000 | .125 | 1.000 | -18.000 | SREF 4.410 SQ.FT. |
| 0457B (NAL 713) | 816 CS F1 | .000 | .125 | 1.300 | -18.000 | LREF 19.240 IN. |
| 0457B (NAL 713) | 816 CS F1 | .000 | .125 | 1.500 | -18.000 | BREF 37.910 IN. |
| | | | | | | XREF 43.510 IN. |
| | | | | | | YREF .0000 |
| | | | | | | ZREF -.4020 |
| | | | | | | SCALE .0405 |

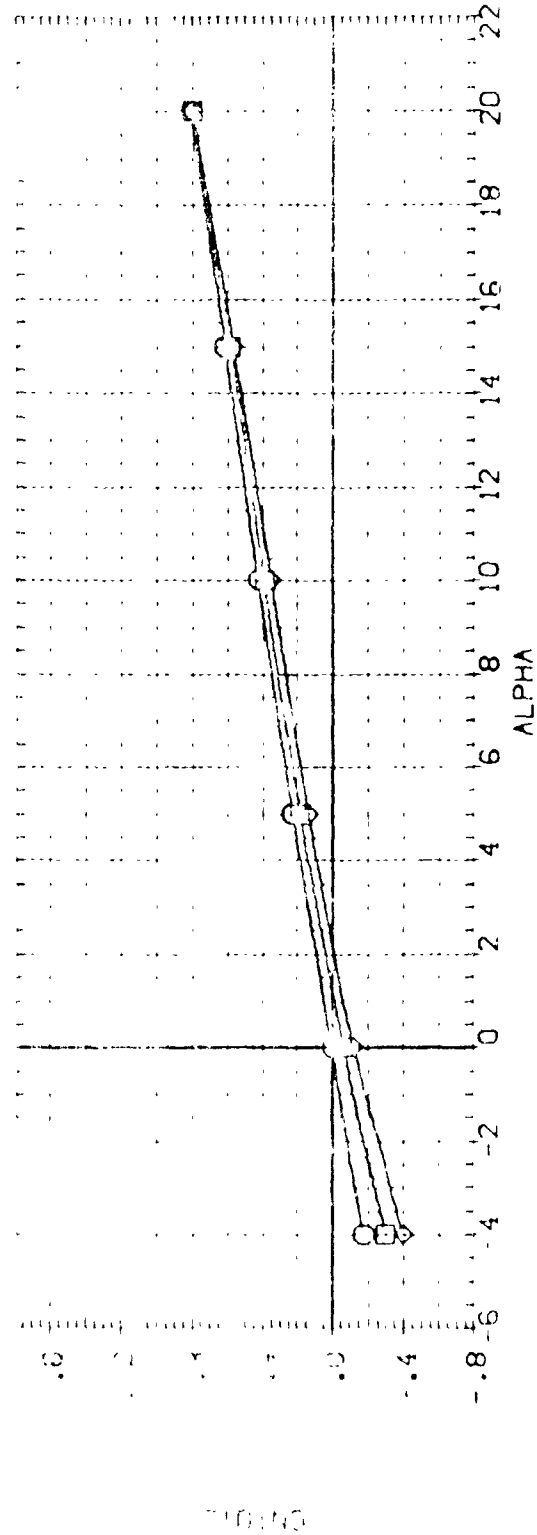
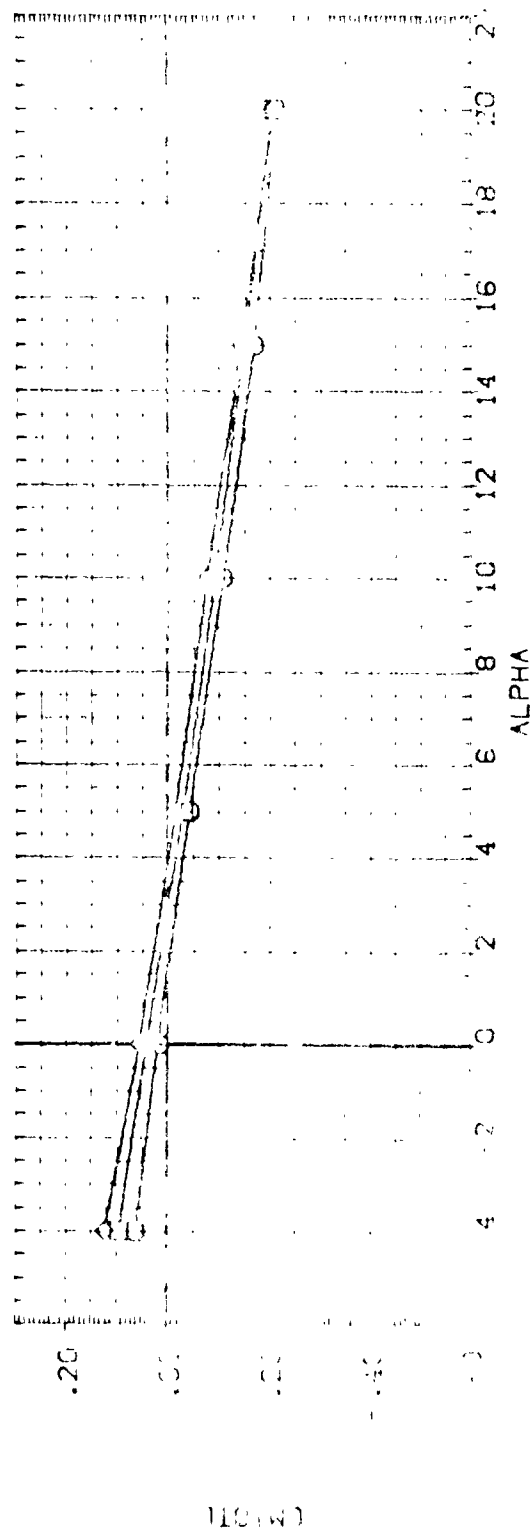


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BOFLAP
 (ADMAG) - .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/S | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------------------|--------|------|-------|---------|-----------------------|
| (FDV015) | QAS78 (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .286 | 1.000 | -18.000 | SREF 4.412C 50 FT. |
| (FDV017) | QAS78 (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .286 | 1.300 | -18.000 | LREF 19.230C |
| (FDV016) | QAS78 (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .286 | 1.500 | -18.000 | BREF 37.935C |
| | | | | | | XMRP 43.593C |
| | | | | | | YMRP .000C |
| | | | | | | ZMRP .405C |
| | | | | | | SCALE .0405 |

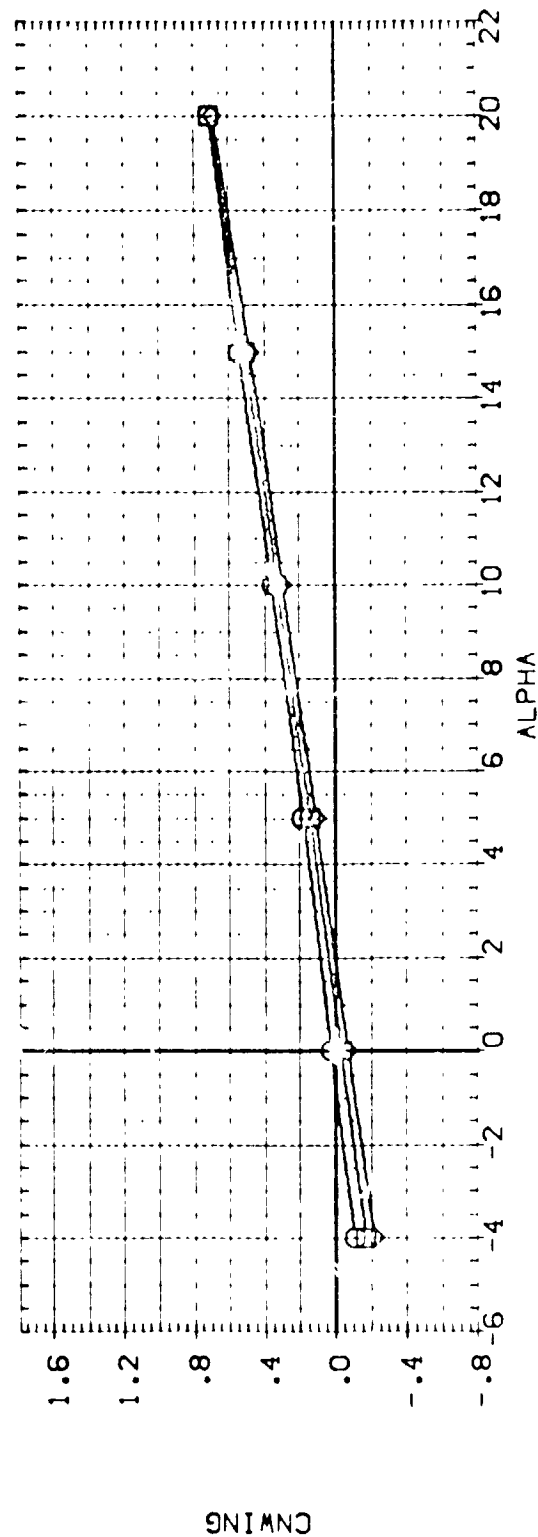
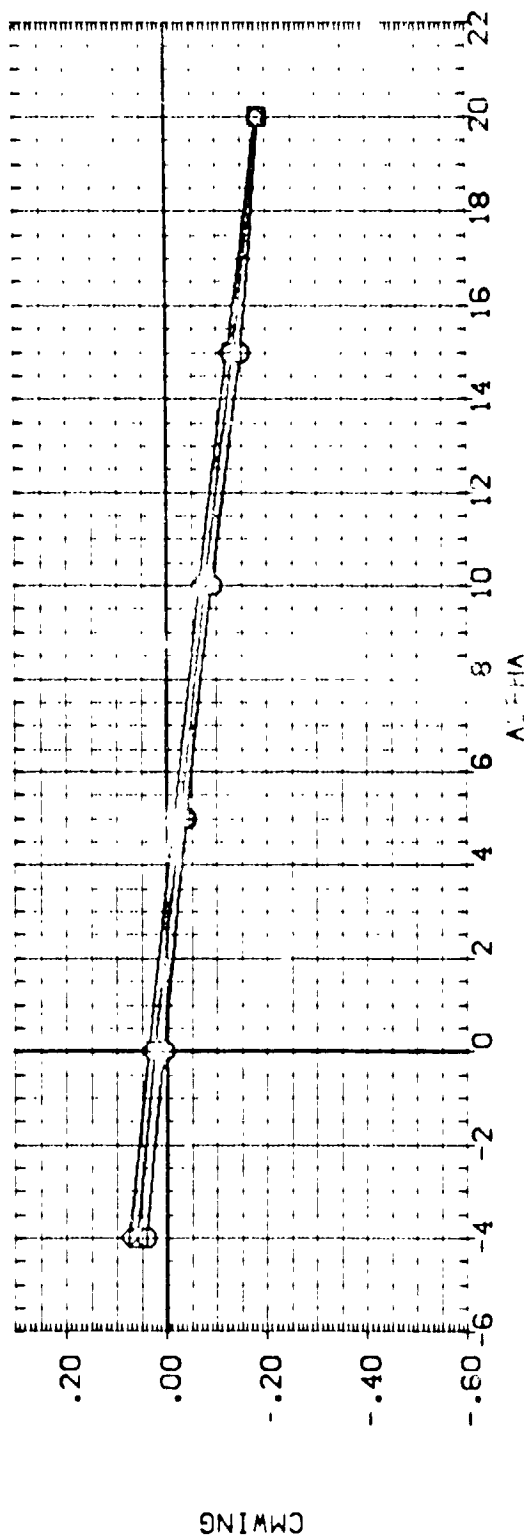


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND -18 BDFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | P/H/V | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (F0V015) | QAS7B (NAAL 7 3) 316 CS F1 J40 V87 E18 | .000 | .286 | 1.000 | -18.000 | SIZE 4.4120 SQ.FT. |
| (13V017) | QAS7B (NAAL 7 3) 316 CS F1 J40 V87 E18 | .000 | .286 | 1.500 | -18.000 | FACE 19.2300 |
| (13V016) | QAS7B (NAAL 7 3) 316 CS F1 J40 V87 E18 | .000 | .286 | 1.500 | -18.000 | ORF 3.5670 |
| | | | | | | WING 43.5280 |
| | | | | | | WING .0000 |
| | | | | | | WING -1.0000 |
| | | | | | | SCALE .0405 |

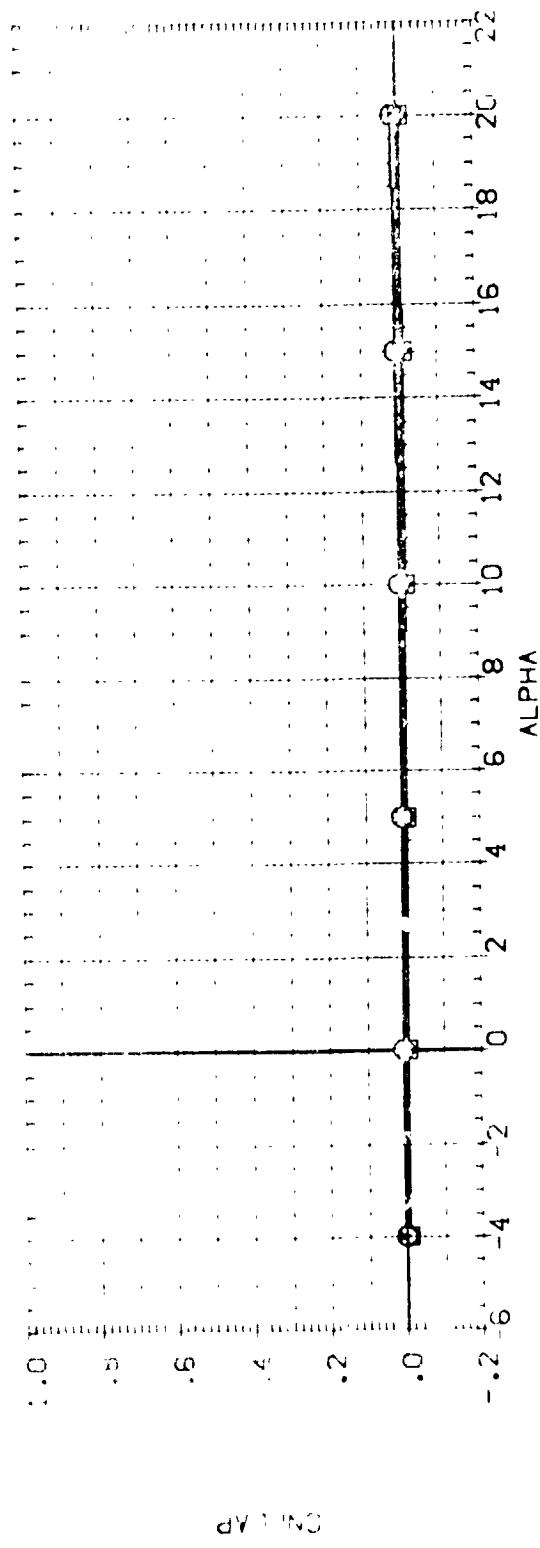
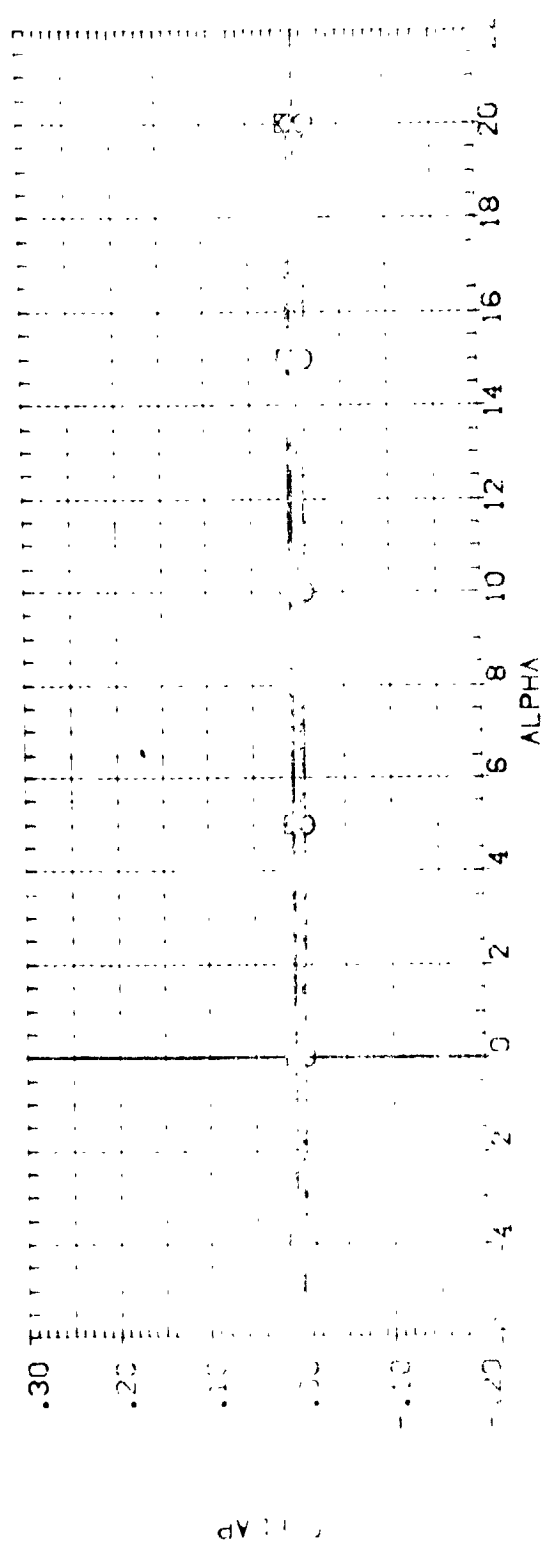


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40 , 0 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (FDV015) | 0A57B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .286 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV017) | 0A57B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .286 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDV016) | 0A57B (NAAL 713) B16 CS F1 J40 V87 E18 | .000 | .286 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XTRP 43.5130 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

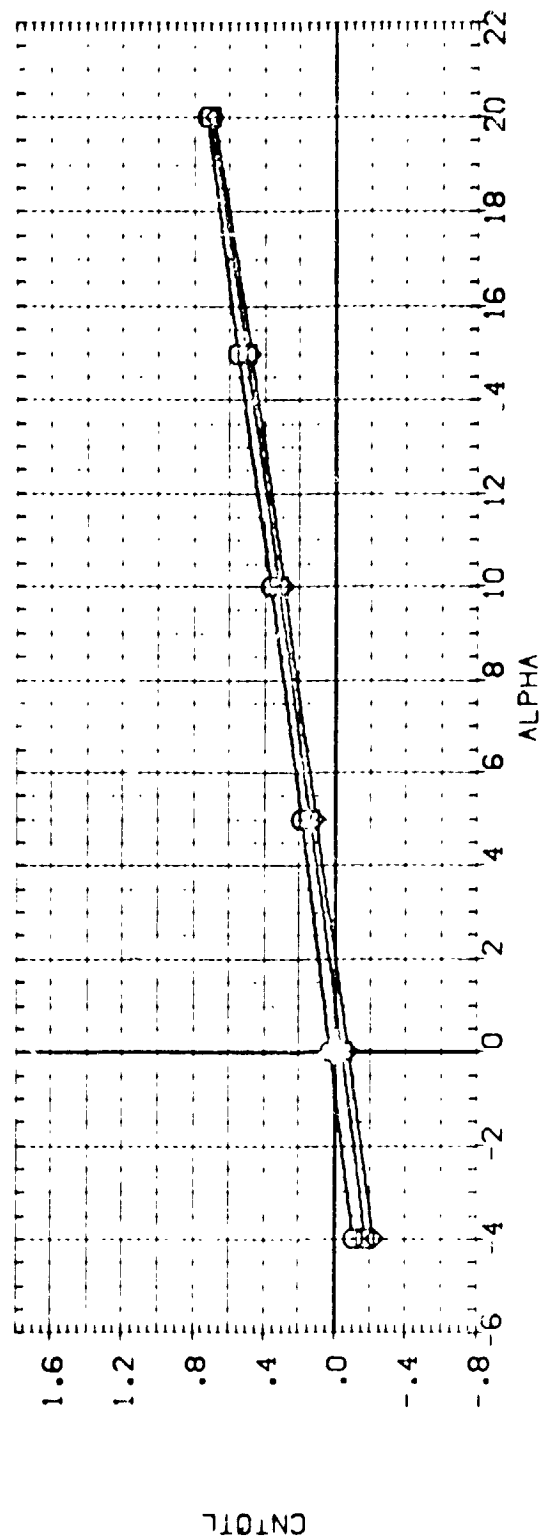
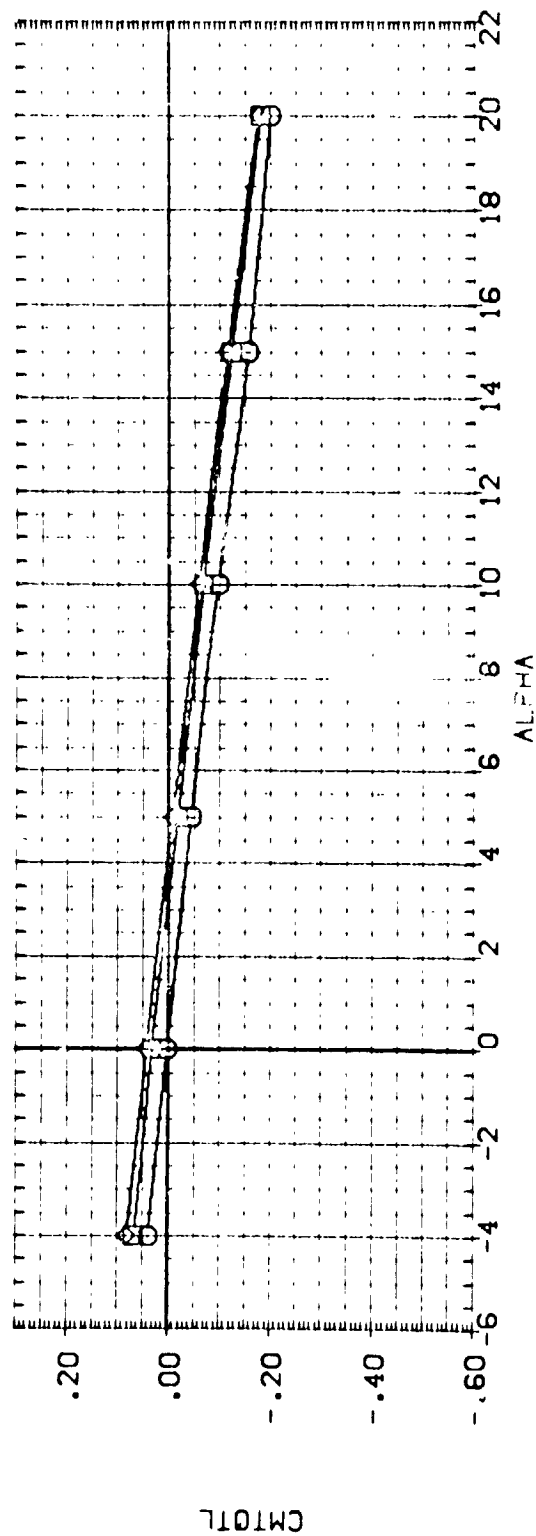


FIG. 26 INTEGRATED FORCE COEFFICIENTS WITH J40 . 0 ELEVON AND -18 BOFLAP
(A) MACH = 0.2

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|-------|--------|-----------------------|
| Q | QAS7B (NAC 7(3) 316 CS F) | .000 | .125 | 1.000 | .000 | SREF 4.170 50.00 |
| Q | QAS7B (NAC 7(3) 316 CS F) | .000 | .125 | 1.300 | .000 | LREF 19.700 22.77 |
| Q | QAS7B (NAC 7(3) 316 CS F) | .000 | .125 | 1.500 | .000 | UREF 30.120 22.77 |
| | | | | | | A400 43.520 22.77 |
| | | | | | | Y400 30.000 22.77 |
| | | | | | | Z400 10.000 22.77 |
| | | | | | | SCALE .0400 |

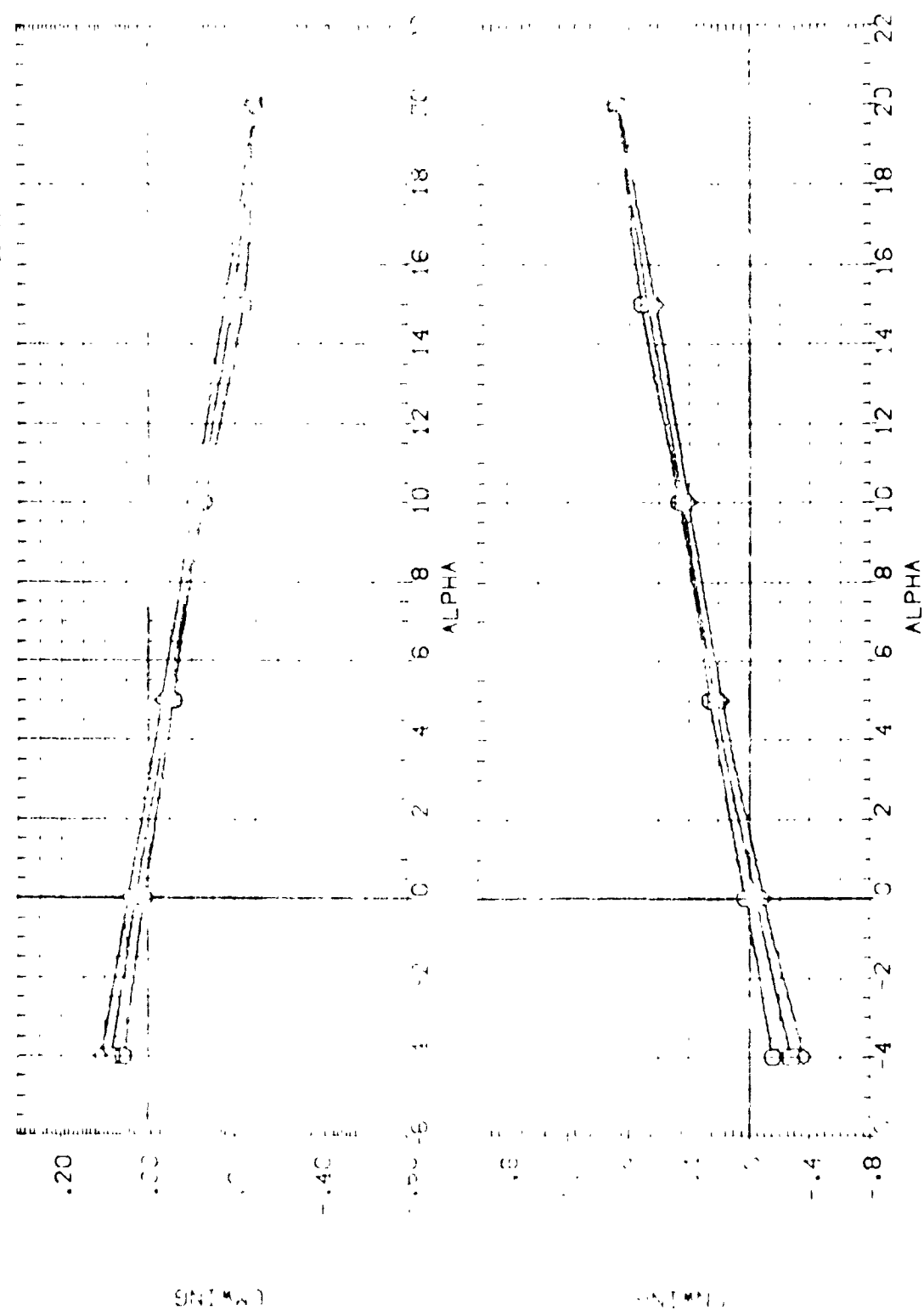


FIG. 27 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND 0 BOFLAP
 (A3000) = 1.70 PAGE 110



| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H.B. | PTN.P. | BOZ LAP | REFERENCE | IN DEVIATION |
|----------|--------|---------------------------|--------|------|--------|---------|-----------|--------------|
| 010 | 010 | 010 | 000 | 000 | 000 | 000 | 000 | 000 |
| 011 | 011 | 011 | 000 | 000 | 000 | 000 | 000 | 000 |
| 012 | 012 | 012 | 000 | 000 | 000 | 000 | 000 | 000 |
| 013 | 013 | 013 | 000 | 000 | 000 | 000 | 000 | 000 |
| 014 | 014 | 014 | 000 | 000 | 000 | 000 | 000 | 000 |
| 015 | 015 | 015 | 000 | 000 | 000 | 000 | 000 | 000 |
| 016 | 016 | 016 | 000 | 000 | 000 | 000 | 000 | 000 |
| 017 | 017 | 017 | 000 | 000 | 000 | 000 | 000 | 000 |
| 018 | 018 | 018 | 000 | 000 | 000 | 000 | 000 | 000 |
| 019 | 019 | 019 | 000 | 000 | 000 | 000 | 000 | 000 |
| 020 | 020 | 020 | 000 | 000 | 000 | 000 | 000 | 000 |
| 021 | 021 | 021 | 000 | 000 | 000 | 000 | 000 | 000 |
| 022 | 022 | 022 | 000 | 000 | 000 | 000 | 000 | 000 |
| 023 | 023 | 023 | 000 | 000 | 000 | 000 | 000 | 000 |
| 024 | 024 | 024 | 000 | 000 | 000 | 000 | 000 | 000 |
| 025 | 025 | 025 | 000 | 000 | 000 | 000 | 000 | 000 |
| 026 | 026 | 026 | 000 | 000 | 000 | 000 | 000 | 000 |
| 027 | 027 | 027 | 000 | 000 | 000 | 000 | 000 | 000 |
| 028 | 028 | 028 | 000 | 000 | 000 | 000 | 000 | 000 |
| 029 | 029 | 029 | 000 | 000 | 000 | 000 | 000 | 000 |
| 030 | 030 | 030 | 000 | 000 | 000 | 000 | 000 | 000 |
| 031 | 031 | 031 | 000 | 000 | 000 | 000 | 000 | 000 |
| 032 | 032 | 032 | 000 | 000 | 000 | 000 | 000 | 000 |
| 033 | 033 | 033 | 000 | 000 | 000 | 000 | 000 | 000 |
| 034 | 034 | 034 | 000 | 000 | 000 | 000 | 000 | 000 |
| 035 | 035 | 035 | 000 | 000 | 000 | 000 | 000 | 000 |
| 036 | 036 | 036 | 000 | 000 | 000 | 000 | 000 | 000 |
| 037 | 037 | 037 | 000 | 000 | 000 | 000 | 000 | 000 |
| 038 | 038 | 038 | 000 | 000 | 000 | 000 | 000 | 000 |
| 039 | 039 | 039 | 000 | 000 | 000 | 000 | 000 | 000 |
| 040 | 040 | 040 | 000 | 000 | 000 | 000 | 000 | 000 |
| 041 | 041 | 041 | 000 | 000 | 000 | 000 | 000 | 000 |
| 042 | 042 | 042 | 000 | 000 | 000 | 000 | 000 | 000 |
| 043 | 043 | 043 | 000 | 000 | 000 | 000 | 000 | 000 |
| 044 | 044 | 044 | 000 | 000 | 000 | 000 | 000 | 000 |
| 045 | 045 | 045 | 000 | 000 | 000 | 000 | 000 | 000 |
| 046 | 046 | 046 | 000 | 000 | 000 | 000 | 000 | 000 |
| 047 | 047 | 047 | 000 | 000 | 000 | 000 | 000 | 000 |
| 048 | 048 | 048 | 000 | 000 | 000 | 000 | 000 | 000 |
| 049 | 049 | 049 | 000 | 000 | 000 | 000 | 000 | 000 |
| 050 | 050 | 050 | 000 | 000 | 000 | 000 | 000 | 000 |
| 051 | 051 | 051 | 000 | 000 | 000 | 000 | 000 | 000 |
| 052 | 052 | 052 | 000 | 000 | 000 | 000 | 000 | 000 |
| 053 | 053 | 053 | 000 | 000 | 000 | 000 | 000 | 000 |
| 054 | 054 | 054 | 000 | 000 | 000 | 000 | 000 | 000 |
| 055 | 055 | 055 | 000 | 000 | 000 | 000 | 000 | 000 |
| 056 | 056 | 056 | 000 | 000 | 000 | 000 | 000 | 000 |
| 057 | 057 | 057 | 000 | 000 | 000 | 000 | 000 | 000 |
| 058 | 058 | 058 | 000 | 000 | 000 | 000 | 000 | 000 |
| 059 | 059 | 059 | 000 | 000 | 000 | 000 | 000 | 000 |
| 060 | 060 | 060 | 000 | 000 | 000 | 000 | 000 | 000 |
| 061 | 061 | 061 | 000 | 000 | 000 | 000 | 000 | 000 |
| 062 | 062 | 062 | 000 | 000 | 000 | 000 | 000 | 000 |
| 063 | 063 | 063 | 000 | 000 | 000 | 000 | 000 | 000 |
| 064 | 064 | 064 | 000 | 000 | 000 | 000 | 000 | 000 |
| 065 | 065 | 065 | 000 | 000 | 000 | 000 | 000 | 000 |
| 066 | 066 | 066 | 000 | 000 | 000 | 000 | 000 | 000 |
| 067 | 067 | 067 | 000 | 000 | 000 | 000 | 000 | 000 |
| 068 | 068 | 068 | 000 | 000 | 000 | 000 | 000 | 000 |
| 069 | 069 | 069 | 000 | 000 | 000 | 000 | 000 | 000 |
| 070 | 070 | 070 | 000 | 000 | 000 | 000 | 000 | 000 |
| 071 | 071 | 071 | 000 | 000 | 000 | 000 | 000 | 000 |
| 072 | 072 | 072 | 000 | 000 | 000 | 000 | 000 | 000 |
| 073 | 073 | 073 | 000 | 000 | 000 | 000 | 000 | 000 |
| 074 | 074 | 074 | 000 | 000 | 000 | 000 | 000 | 000 |
| 075 | 075 | 075 | 000 | 000 | 000 | 000 | 000 | 000 |
| 076 | 076 | 076 | 000 | 000 | 000 | 000 | 000 | 000 |
| 077 | 077 | 077 | 000 | 000 | 000 | 000 | 000 | 000 |
| 078 | 078 | 078 | 000 | 000 | 000 | 000 | 000 | 000 |
| 079 | 079 | 079 | 000 | 000 | 000 | 000 | 000 | 000 |
| 080 | 080 | 080 | 000 | 000 | 000 | 000 | 000 | 000 |
| 081 | 081 | 081 | 000 | 000 | 000 | 000 | 000 | 000 |
| 082 | 082 | 082 | 000 | 000 | 000 | 000 | 000 | 000 |
| 083 | 083 | 083 | 000 | 000 | 000 | 000 | 000 | 000 |
| 084 | 084 | 084 | 000 | 000 | 000 | 000 | 000 | 000 |
| 085 | 085 | 085 | 000 | 000 | 000 | 000 | 000 | 000 |
| 086 | 086 | 086 | 000 | 000 | 000 | 000 | 000 | 000 |
| 087 | 087 | 087 | 000 | 000 | 000 | 000 | 000 | 000 |
| 088 | 088 | 088 | 000 | 000 | 000 | 000 | 000 | 000 |
| 089 | 089 | 089 | 000 | 000 | 000 | 000 | 000 | 000 |
| 090 | 090 | 090 | 000 | 000 | 000 | 000 | 000 | 000 |
| 091 | 091 | 091 | 000 | 000 | 000 | 000 | 000 | 000 |
| 092 | 092 | 092 | 000 | 000 | 000 | 000 | 000 | 000 |
| 093 | 093 | 093 | 000 | 000 | 000 | 000 | 000 | 000 |
| 094 | 094 | 094 | 000 | 000 | 000 | 000 | 000 | 000 |
| 095 | 095 | 095 | 000 | 000 | 000 | 000 | 000 | 000 |
| 096 | 096 | 096 | 000 | 000 | 000 | 000 | 000 | 000 |
| 097 | 097 | 097 | 000 | 000 | 000 | 000 | 000 | 000 |
| 098 | 098 | 098 | 000 | 000 | 000 | 000 | 000 | 000 |
| 099 | 099 | 099 | 000 | 000 | 000 | 000 | 000 | 000 |
| 100 | 100 | 100 | 000 | 000 | 000 | 000 | 000 | 000 |

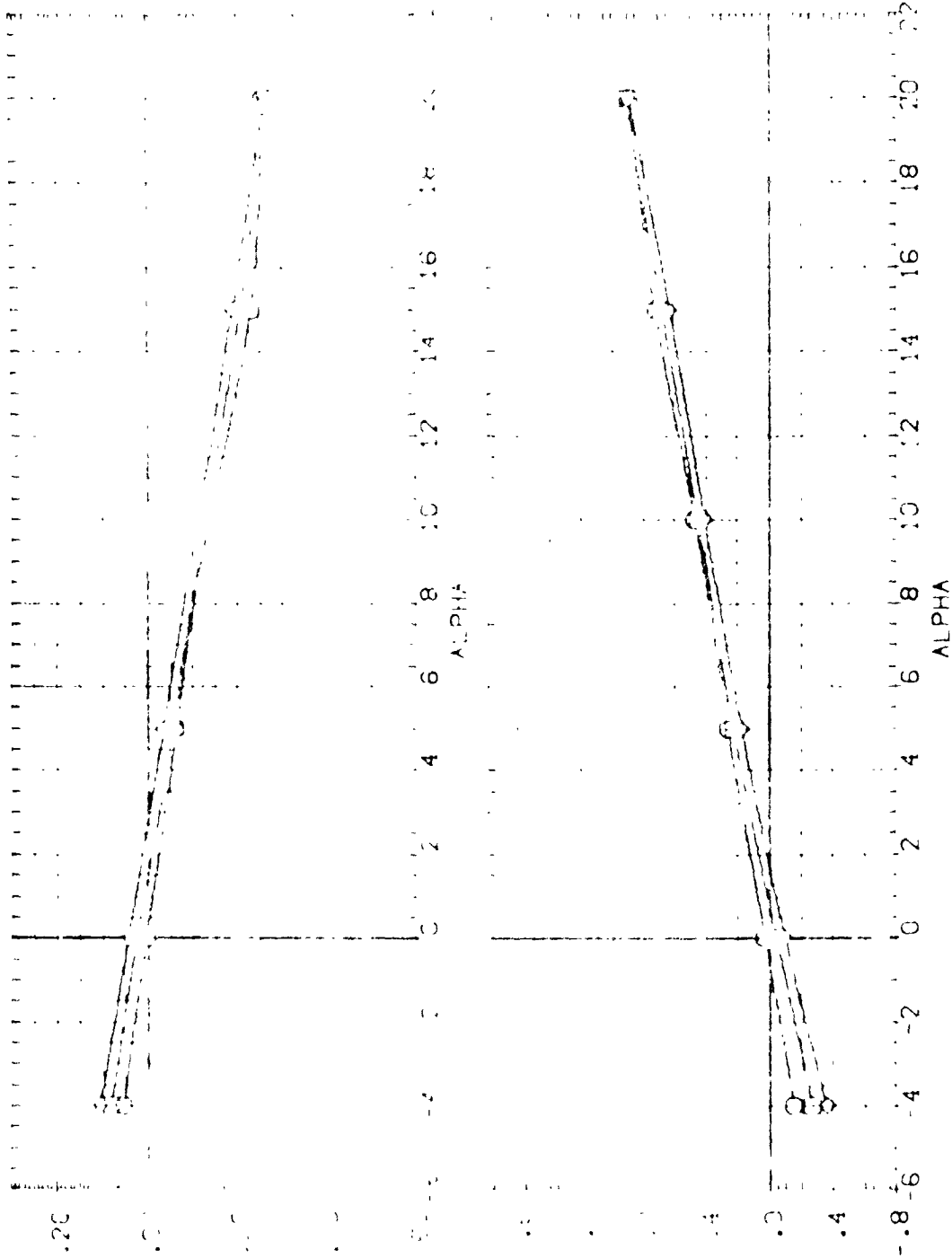


FIG. 27 INTEGRAL FORCE COEFFICIENTS WITH 240 • 0 ELEVON A 0 BOZ LAP
 (ADDITIONAL - 140)



| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | HVB | | PTNP | | BUFLAP | | REFERENCE INFORMATION | |
|-----------------|-----|---------------------------|-----------|--------|---------|------|------|-------|------|--------|---------|-----------------------|--|
| (0.013) | (0) | 0457B (NAL 713) | 815 CS F1 | J40 | V87 E18 | .000 | .286 | 1.000 | .000 | SIZE | 4.4.00 | SO.FT. | |
| (0.014) | (0) | 0457B (NAL 713) | 816 CS F1 | J40 | V87 E18 | .000 | .286 | 1.300 | .000 | DATE | 9.1.70 | IN. | |
| (0.012) | (0) | 0457B (NAL 713) | 816 CS F1 | J40 | V87 E18 | .000 | .286 | 1.500 | .000 | BRN | 3.0.70 | IN. | |
| | | | | | | | | | | WTR | 4.3.70 | IN. | |
| | | | | | | | | | | WTR | 0.0.70 | IN. | |
| | | | | | | | | | | WTR | -4.5.70 | IN. | |
| | | | | | | | | | | SCALE | 0.000 | | |

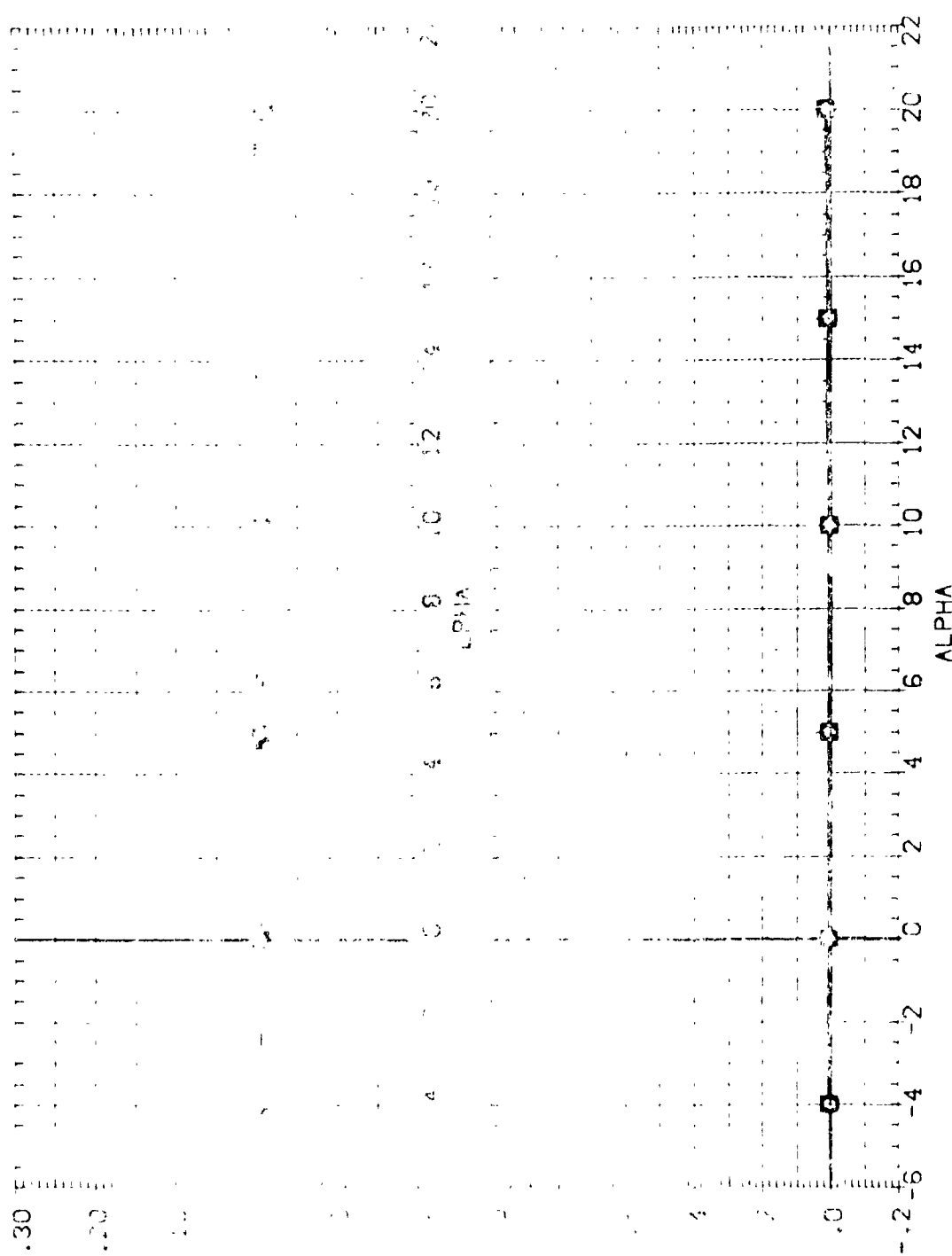


FIG. 27 INTEGRATED FORCE COEFFICIENTS WITH J40 • 0 ELEVON AND 0 BUFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | W/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|----------------------------|-----|---------|--------|------|-------|--------|-----------------------|
| (FDV013) | QAS7B (NAAL 713) 816 CS F1 | J40 | V87 E18 | .000 | .286 | 1.000 | .000 | SREF 4.4120 SQ.FT. |
| (FDV014) | QAS7B (NAAL 713) 816 CS F1 | J40 | V87 E18 | .000 | .286 | 1.300 | .000 | LREF 19.2300 IN. |
| (FDV012) | QAS7B (NAAL 713) 816 CS F1 | J40 | V87 E18 | .000 | .286 | 1.500 | .000 | BREF 37.9350 IN. |
| | | | | | | | | XMRP 43.5530 IN. |
| | | | | | | | | YMRP .0000 IN. |
| | | | | | | | | ZMRP -.4050 IN. |
| | | | | | | | | SCALE .0405 |

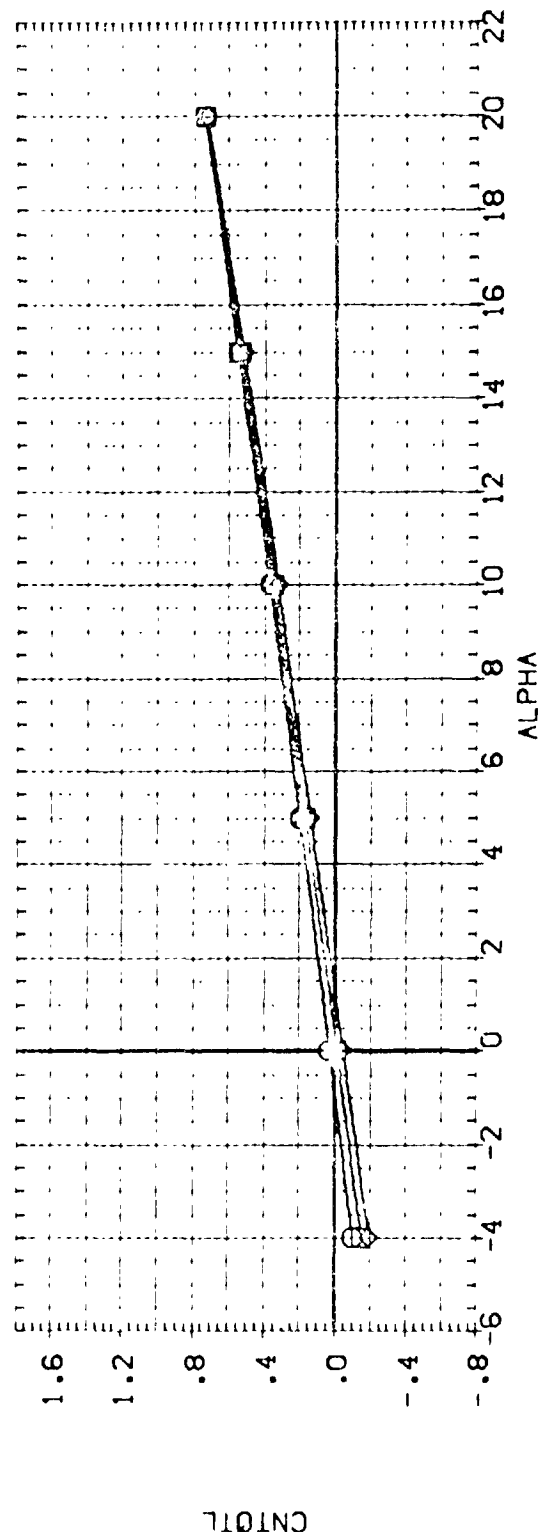
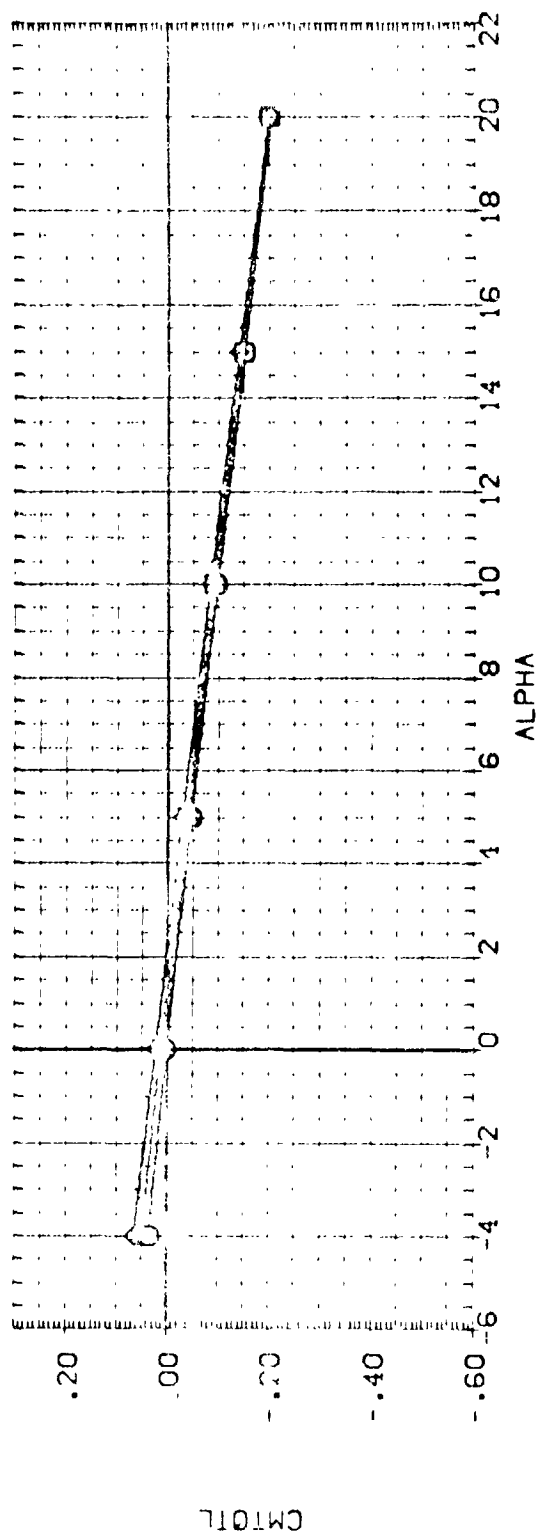


FIG. 27 INTEGRATED FORCE COEFFICIENTS WITH J40 • 0 ELEVON AND 0 BOFLAP
 (A)MACH = .20

| | | | | | | |
|-----------------|--|--------|------|-------|--------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTN/P | BDFLAP | REFERENCE INFORMATION |
| (FDV024) | QAS7B (NAAL 713) 816 CS F1 J40 V67 E18 | .000 | .125 | 1.000 | 20.000 | SREF 4.4120 50.0 FT. |
| (FDV023) | QAS7B (NAAL 713) 816 CS F1 J40 V67 E18 | .000 | .125 | 1.300 | 20.000 | LREF 19.2300 IN. |
| (FDV022) | QAS7B (NAAL 713) 816 CS F1 J40 V67 E18 | .000 | .125 | 1.500 | 20.000 | BREF 37.9350 IN. |
| | | | | | | XTRP 43.5230 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

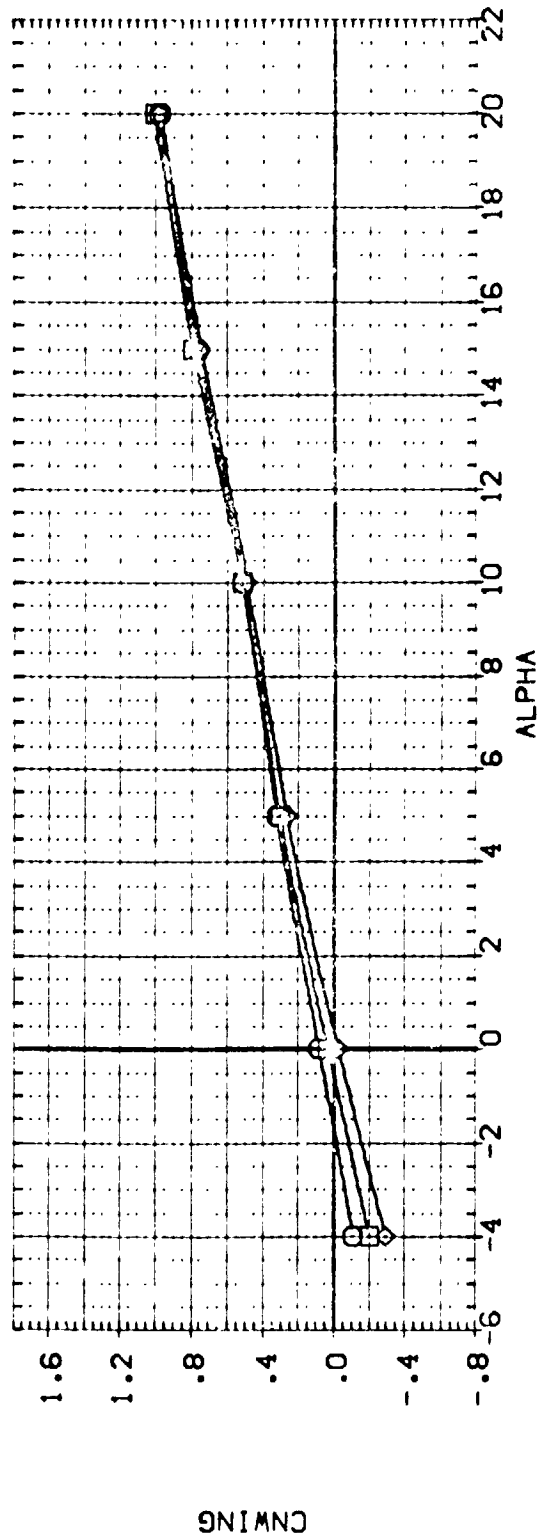
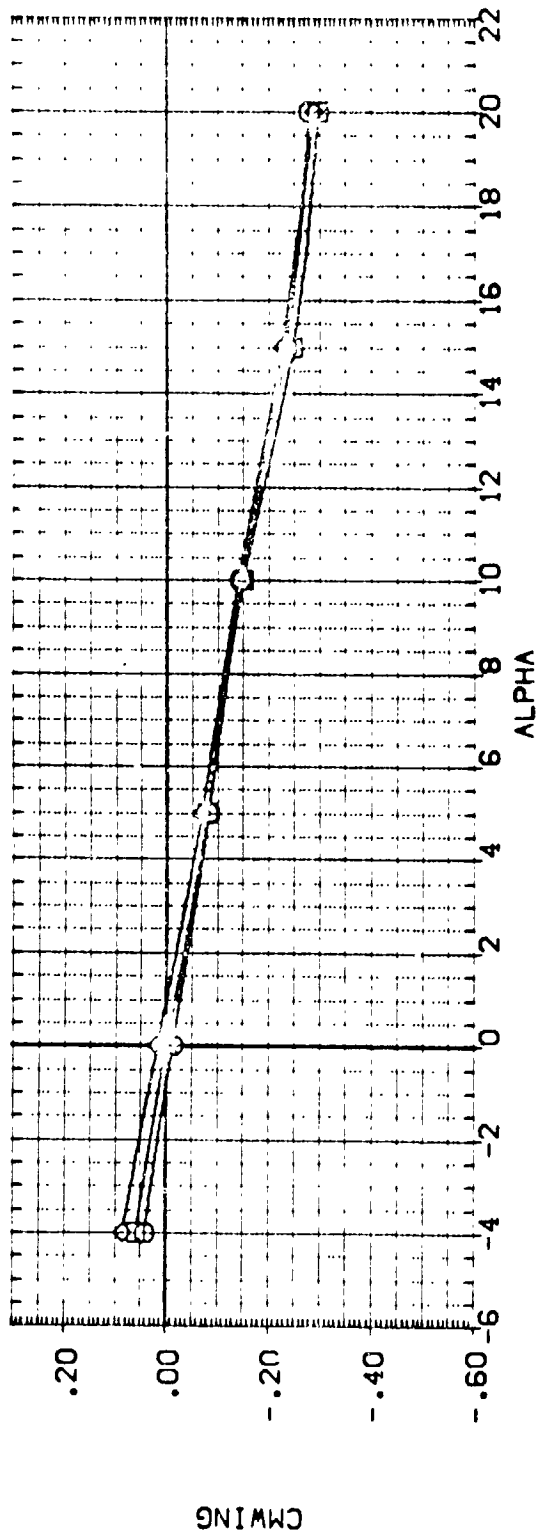


FIG. 28 INTEGRATED FORCE COEFFICIENTS WITH J40 • 0 ELEVON AND 20 BDFLAP
(M)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | PTNP | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|--------|-----------------------|
| (FDV024) | 0A57B (NAL 7:3) 8:6 CS F1 | .000 | .125 | 20.000 | SREF 4.4120 50.0 FT. |
| (FDV023) | 0A57B (NAL 7:3) 8:6 CS F1 | .000 | .125 | 20.000 | LREF 15.2300 IN. |
| (FDV022) | 0A57B (NAL 7:3) 9:6 CS F1 | .000 | .125 | 20.000 | BREF 37.9350 IN. |
| | | | | | XREF 43.5000 IN. |
| | | | | | YREF .0000 IN. |
| | | | | | ZREF .0000 IN. |
| | | | | | SCALE .0400 |

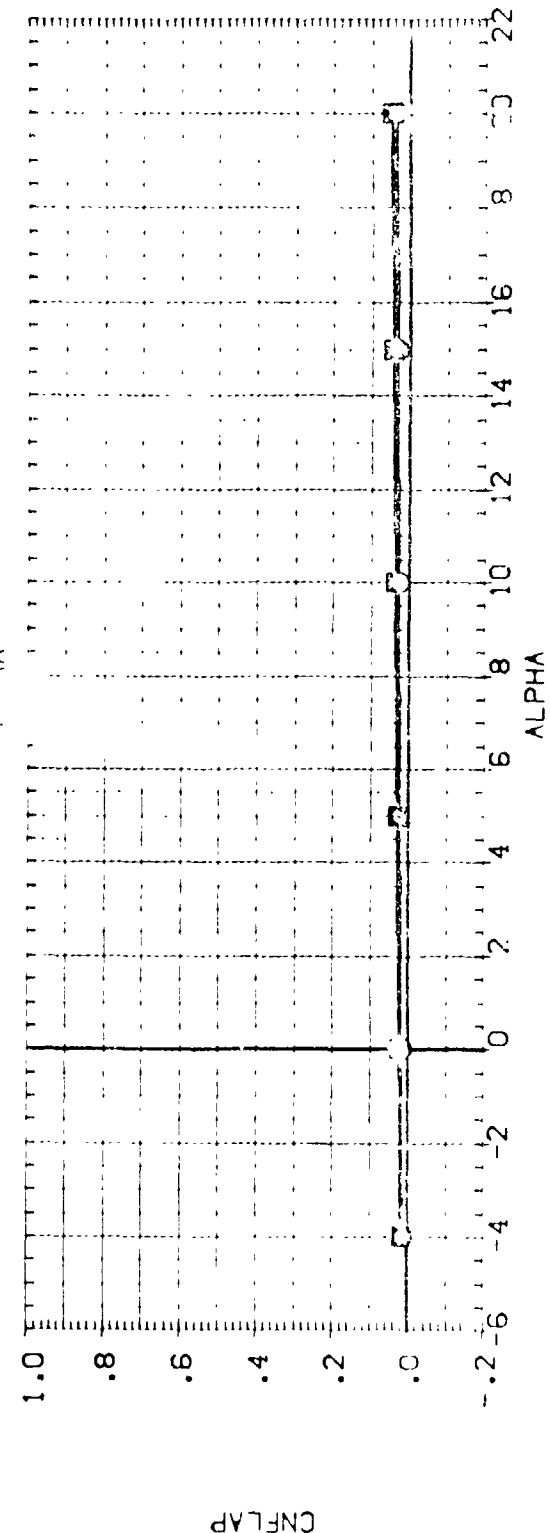
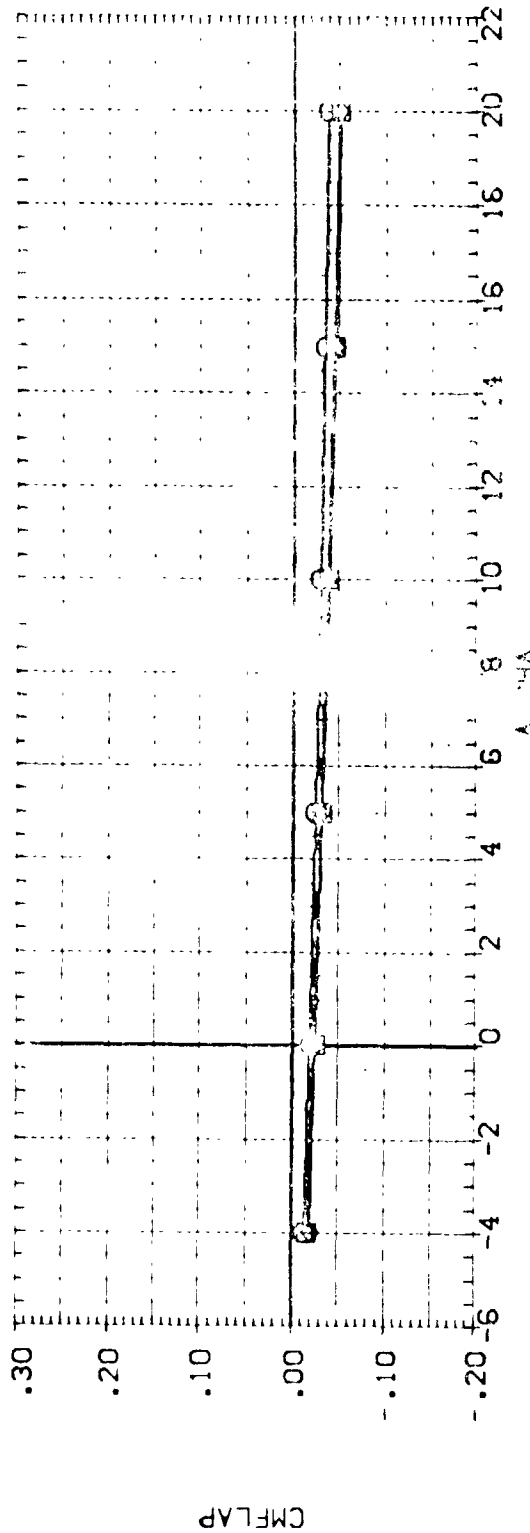


FIG. 28 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BOFLAP
 CALMACH = .20

DATA SET SYMBOLS

(FDV024)
(FDV023)
(FDV022)

CONFIGURATION DESCRIPTION
CAS7B (NAL 713) 916 CS F1 J40
CAS7B (NAL 713) 916 CS F1 J40
CAS7B (NAL 713) 916 CS F1 J40

ELEVON H/VB
.000
.000
.000

PTN/P
1.000
1.300
1.500

BOFLAP
20.000
20.000
20.000

REFERENCE INFORMATION
SREF 4.4120 SQ.FT.
LREF 19.2300 IN.
BREF 37.9350 IN.
XREF 43.5330 IN.
YREF .0000 IN.
ZREF .4050 IN.
SCALE .0405

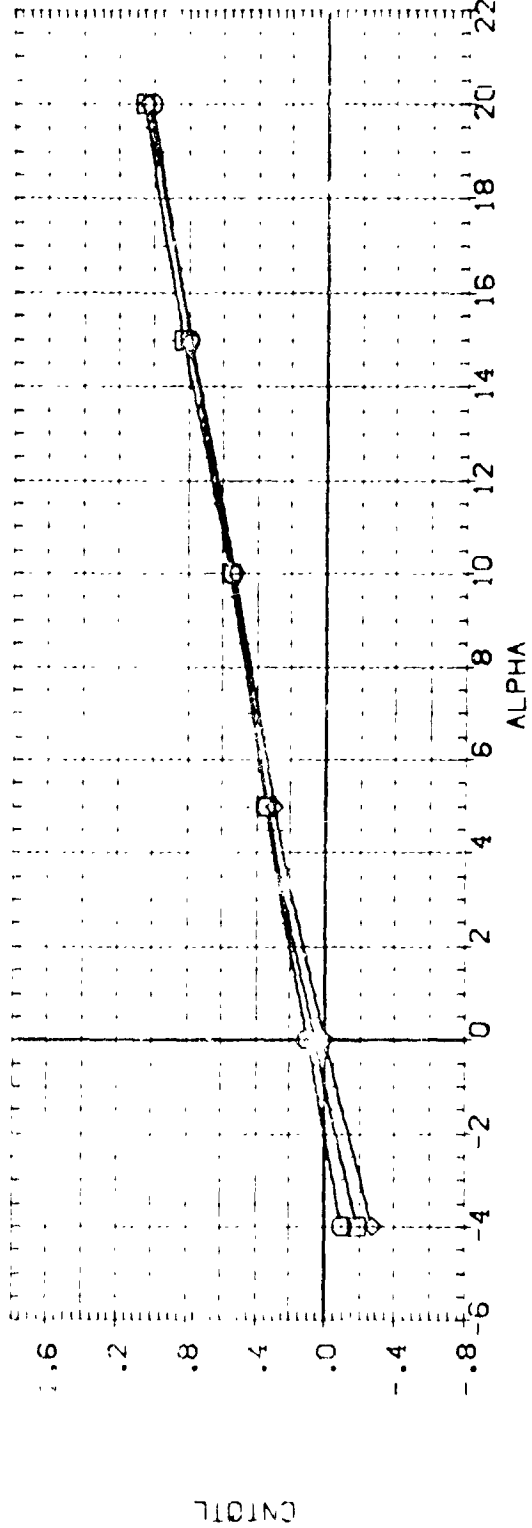
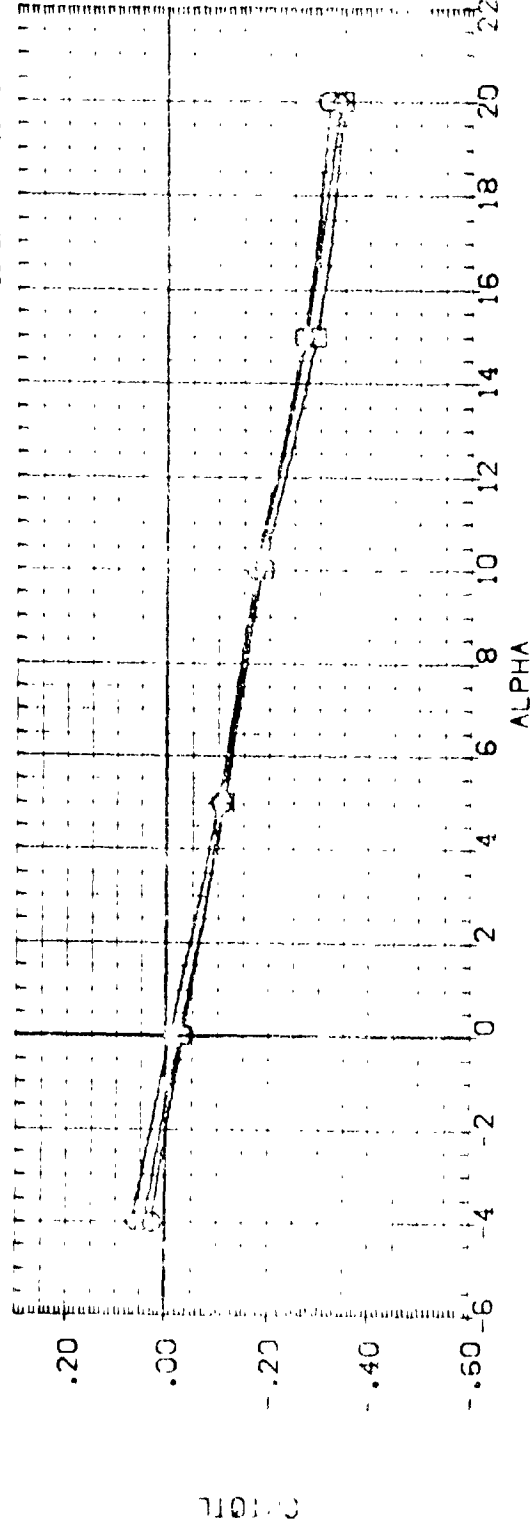


FIG. 28 INTEGRATED FORCE COEFFICIENTS WITH J40 , 0 ELEVON AND 20 BOFLAP
(A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|-----------------------------|--------|------|-------|--------|-----------------------|
| (FDV021) | Q 0A578 (NAL 713) 816 CS F1 | .000 | .286 | 1.000 | 20.000 | SREF 4.4120 SQ.FT. |
| (FDV020) | Q 0A578 (NAL 713) 816 CS F1 | .000 | .286 | 1.300 | 20.000 | LREF 19.2300 IN. |
| (FDV019) | Q 0A578 (NAL 713) 816 CS F1 | .000 | .286 | 1.500 | 20.000 | BREF 37.9350 IN. |
| | | | | | | XREF 43.5530 IN. |
| | | | | | | YH8P .0000 IN. |
| | | | | | | ZH8P -.4050 IN. |
| | | | | | | SCALE .0405 |

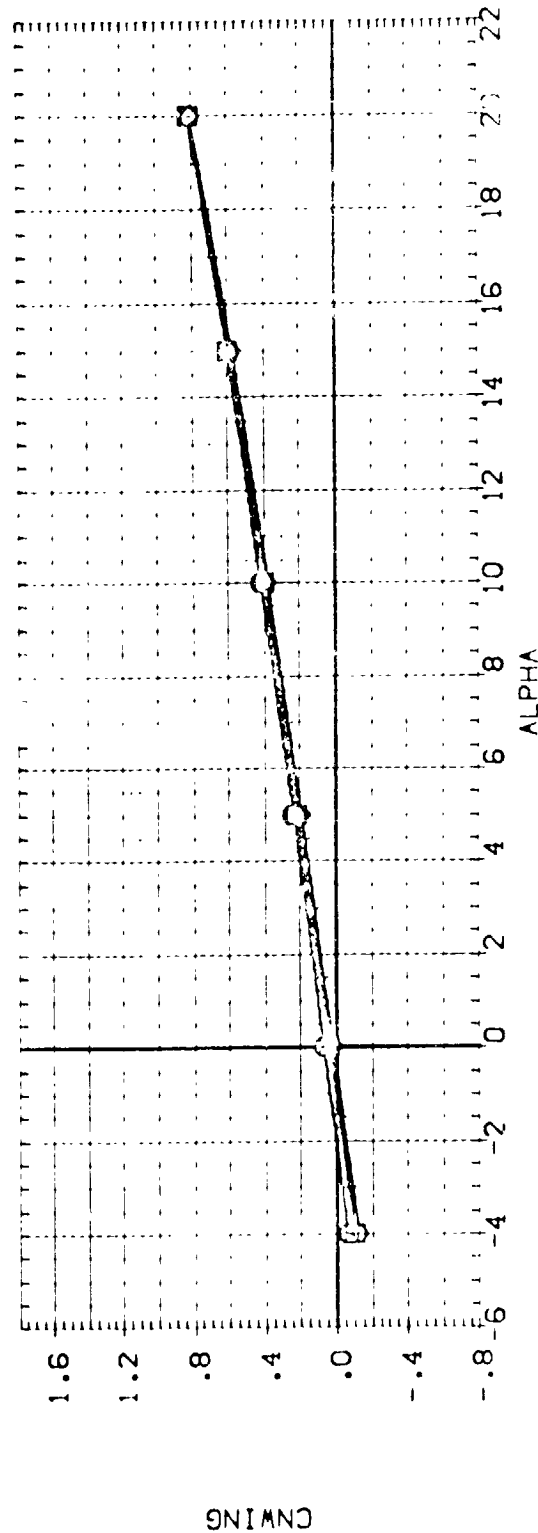
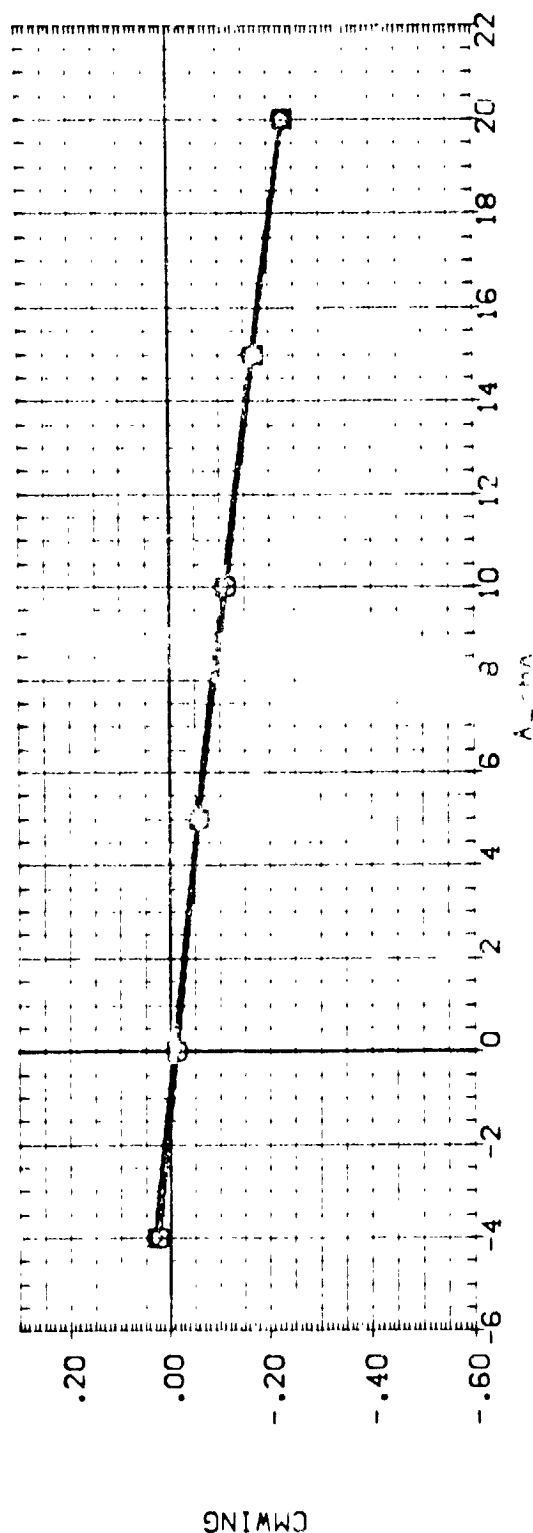


FIG. 28 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BOFLAP
 $\gamma_{ADMACH} = .20$ PAGE 118

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------------------|--------|------|-------|--------|-----------------------|
| FD-021) | 0A57B (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .266 | 1.000 | 20.000 | SREF 4.4100 SQ.FT. |
| FD-020) | 0A57B (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .266 | 1.300 | 20.000 | LREF 19.2500 IN. |
| FD-019) | 0A57B (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .266 | 1.500 | 20.000 | BREF 37.6200 IN. |
| | | | | | | XREF 43.5000 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -1.4050 IN. |
| | | | | | | SCALE .0405 |

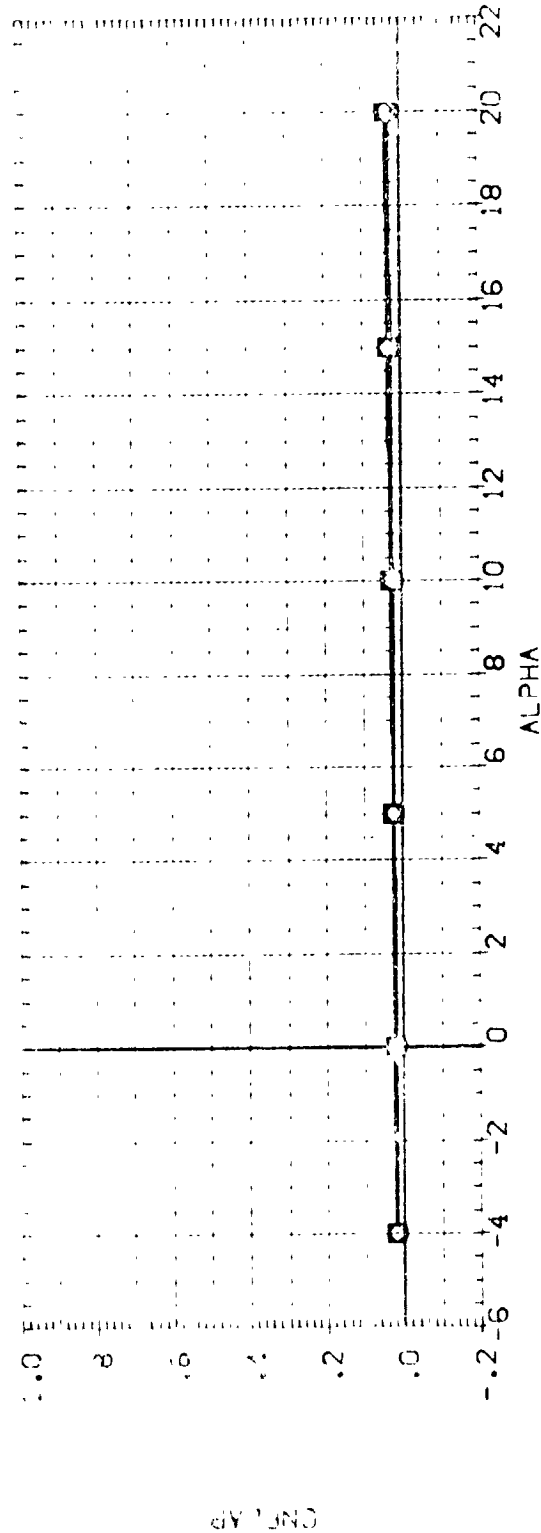
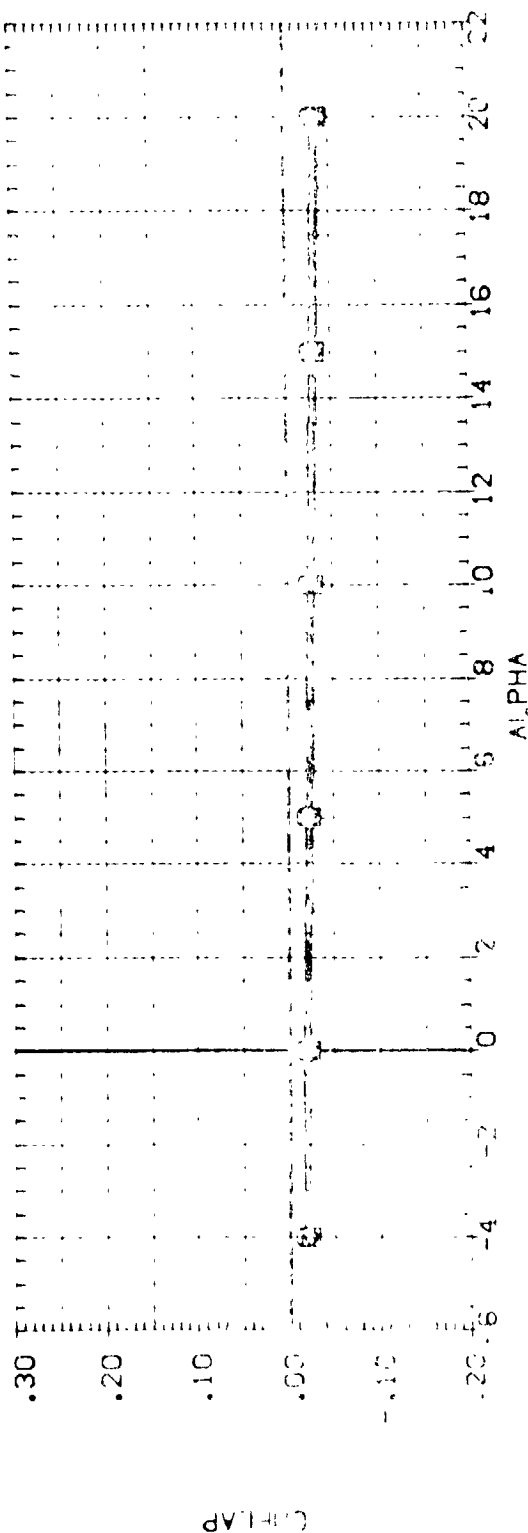


FIG. 28 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVON AND 20 BOFLAP
 (ADMACH = .20) PAGE 120



| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVATION | H/B | PTN/P | BOFL/P | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|------|-------|--------|-----------------------|
| (FOV021) | QAS78 (NAL 713) B16 CS F1 | .000 | .286 | 1.000 | 20.000 | SREF 4.4120 SQ.FT. |
| (FOV020) | QAS78 (NAL 713) B16 CS F1 | .000 | .286 | 1.300 | 20.000 | LREF 19.2300 IN. |
| (FOV019) | QAS78 (NAL 713) B16 CS F1 | .000 | .286 | 1.500 | 20.000 | BREF 37.9150 IN. |
| | | | | | | AYRO 43.5000 IN. |
| | | | | | | YMRP .0000 IN. |
| | | | | | | ZMRP -.4050 IN. |
| | | | | | | SCALE .0405 |

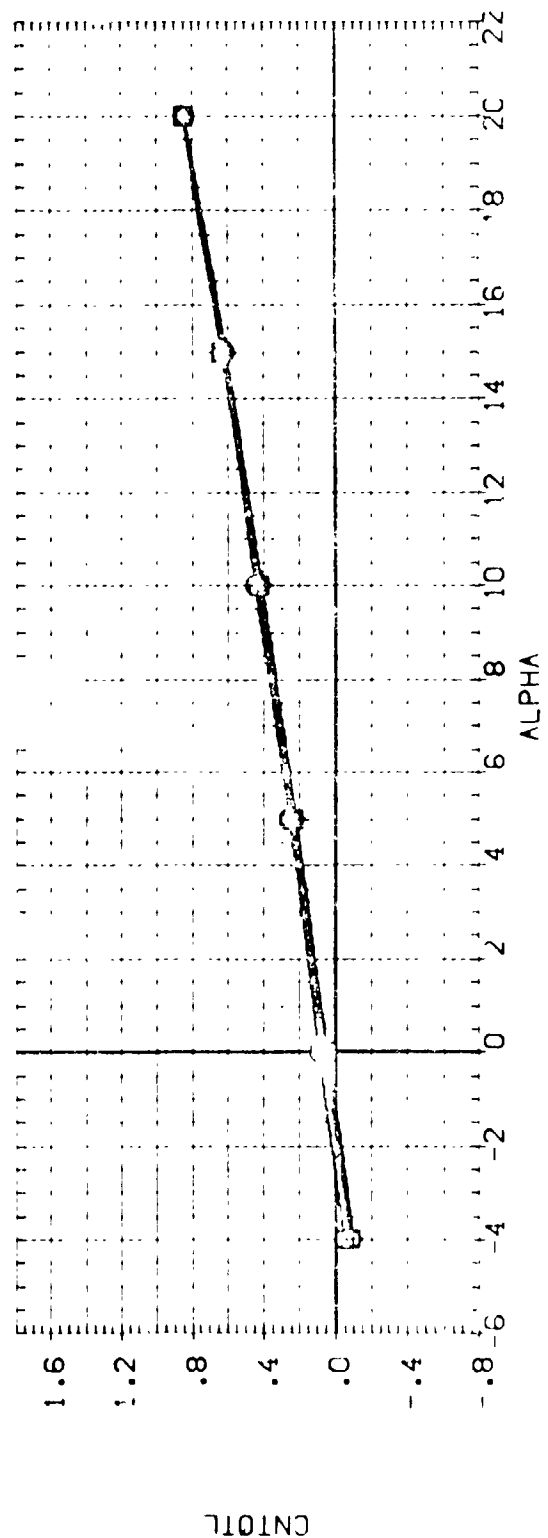
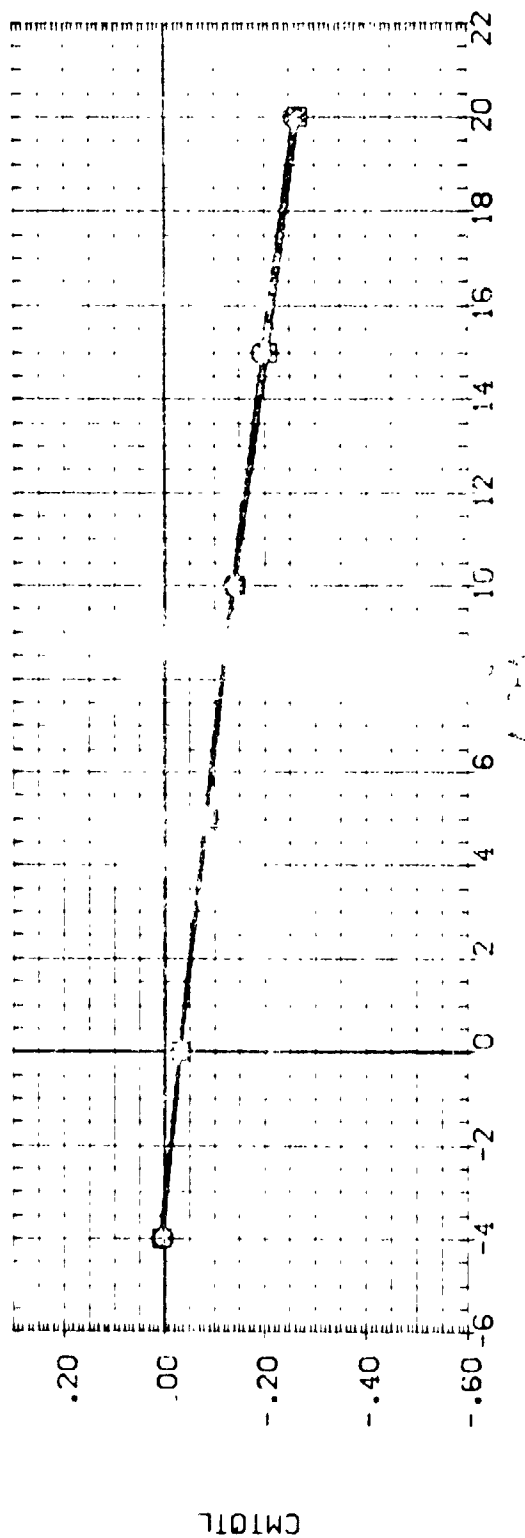


FIG. 28 INTEGRATED FORCE COEFFICIENTS WITH J40, 0 ELEVATION AND 0 BOFLAP
 (A) MAC = 0.40

| DATA SET SYMBOL | CONFIGURATION | DESCRIPTION | J40 | V87 | E18 | ELEVON | HUB | PTN/0 | BOFLAP | INTER-ICE | INTER-ICE |
|-----------------|----------------|-------------|-----|-----|-----|--------|------|-------|---------|-----------|-----------|
| 10-030 | 3A5TB (NAC 13) | 316 CS F1 | J40 | V87 | E18 | 15.000 | .048 | 1.000 | -18.000 | SCALE | 1.000 |
| 10-030 | 3A5TB (NAC 13) | 316 CS F1 | J40 | V87 | E18 | 15.000 | .048 | 1.000 | -18.000 | SCALE | 1.000 |
| 10-030 | 3A5TB (NAC 13) | 316 CS F1 | J40 | V87 | E18 | 15.000 | .048 | 1.000 | -18.000 | SCALE | 1.000 |

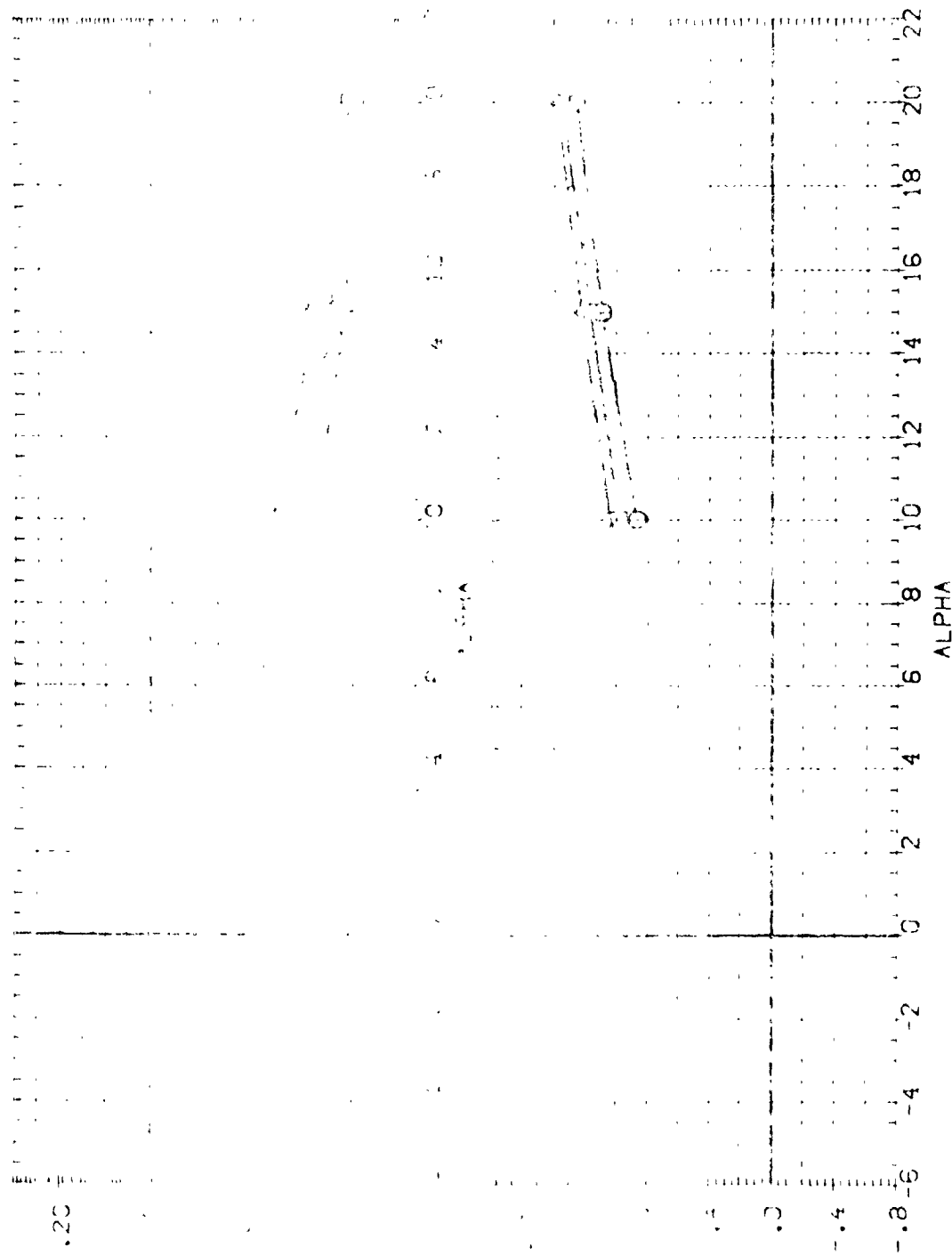


FIG. 29 INTEGRATED FORCE COEFFICIENTS WITH J40 , 15 ELEVON AND -18 BOFLAP
 (A)MAC = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V67 E18 | ELEVON | W/S | PTU/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|----------------------------|-----|---------|--------|------|-------|---------|-----------------------|
| (H0V000) | QAS78 (NAAL 713) B16 CS F1 | J40 | V67 E18 | 15.000 | .038 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (H0V002) | QAS78 (NAAL 713) B16 CS F1 | J40 | V67 E18 | 15.000 | .038 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (H0V003) | QAS78 (NAAL 713) B16 CS F1 | J40 | V67 E18 | 15.000 | .038 | 1.500 | -18.000 | SREF 37.9350 IN. |
| | | | | | | | | XREF 43.5500 IN. |
| | | | | | | | | YREF .0000 IN. |
| | | | | | | | | ZREF -.4050 IN. |
| | | | | | | | | SCALE .0405 |

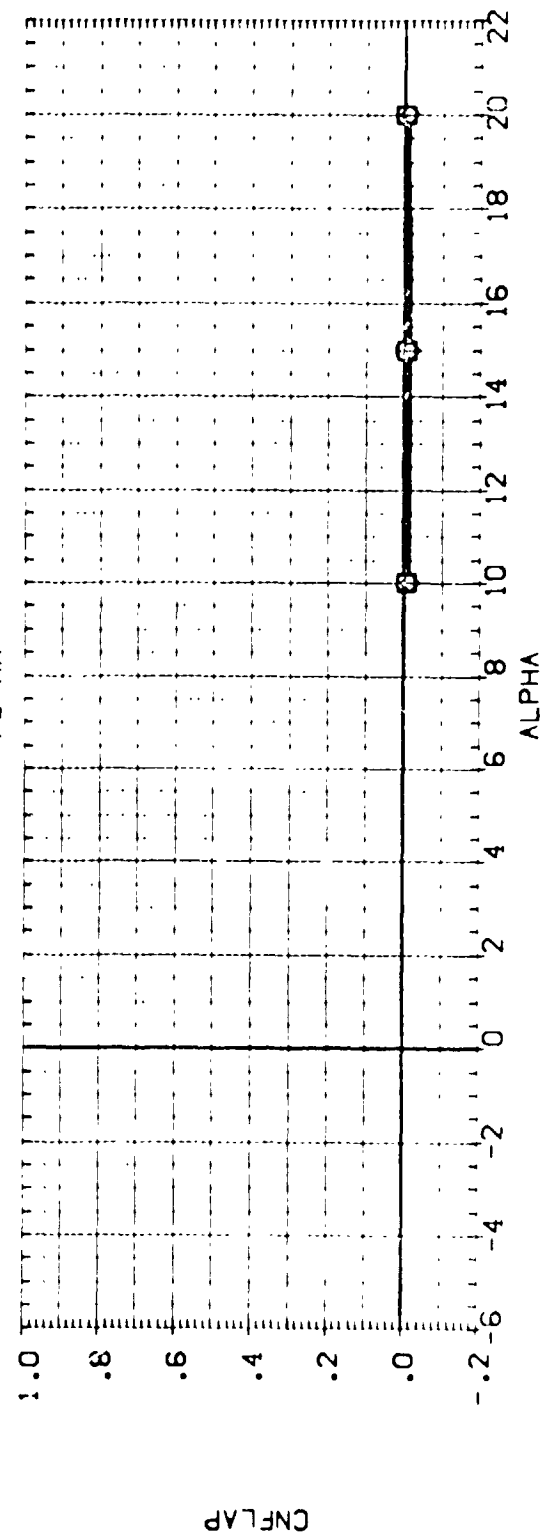
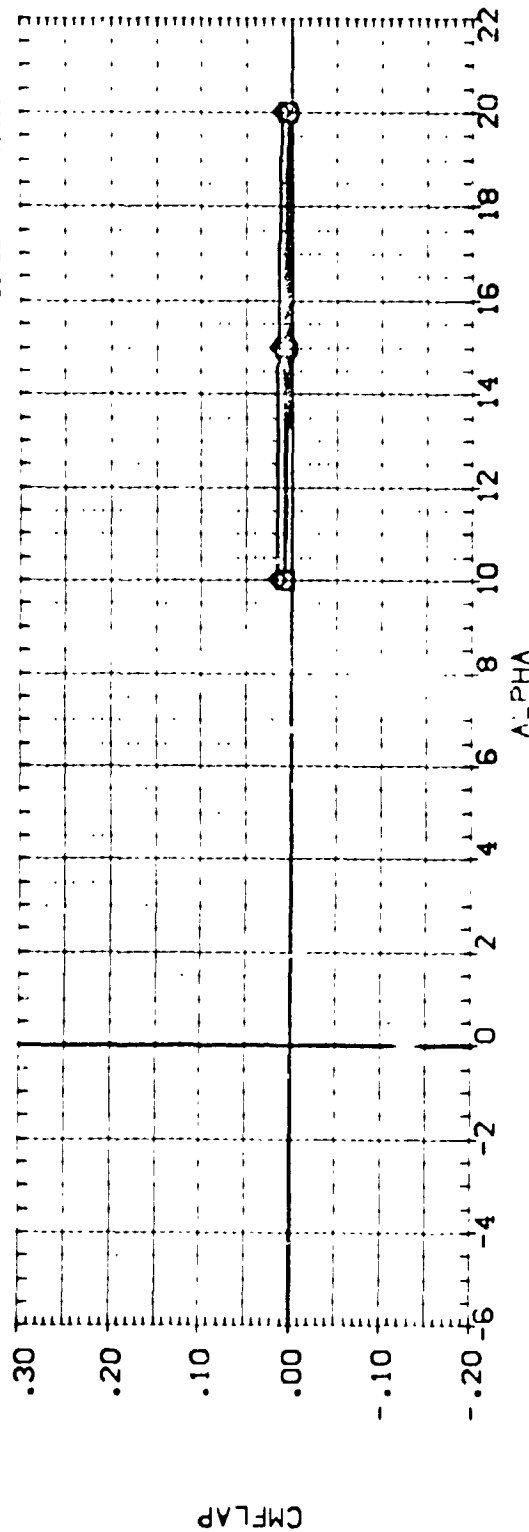


FIG. 29 INTEGRATED FORCE COEFFICIENTS WITH J40 , 15 ELEVON AND -18 BDFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | MVB | PTMVP | BDFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| (FDV030) | 0A578 (NAL 713) 816 CS F1 | 15.000 | .125 | 1.000 | -18.000 | SREF 4.412C 50.FT. |
| (FDV029) | 0A578 (NAL 713) 816 CS F1 | 15.000 | .125 | 1.300 | -18.000 | LREF 19.230C IN. |
| (FDV028) | 0A578 (NAL 713) 816 CS F1 | 15.000 | .125 | 1.500 | -18.000 | BREF 37.535C IN. |
| | | | | | | XREF 43.530C IN. |
| | | | | | | YREF .000C IN. |
| | | | | | | ZREF -.3050 IN. |
| | | | | | | SCALE .0405 |

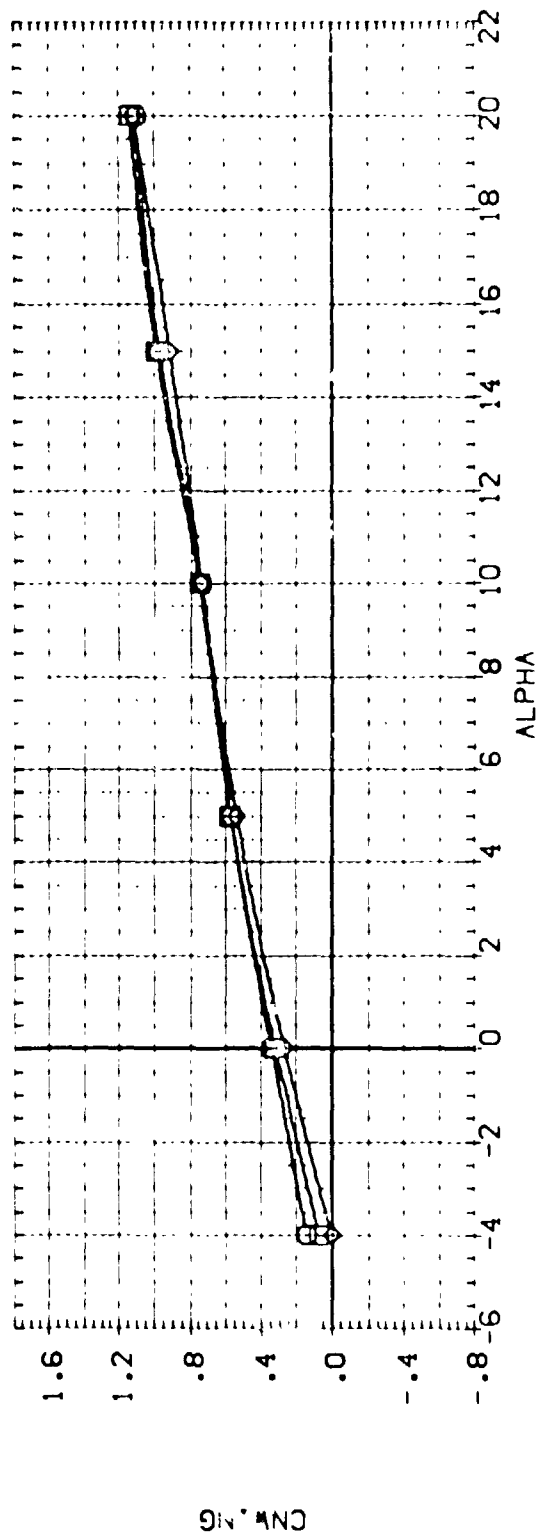
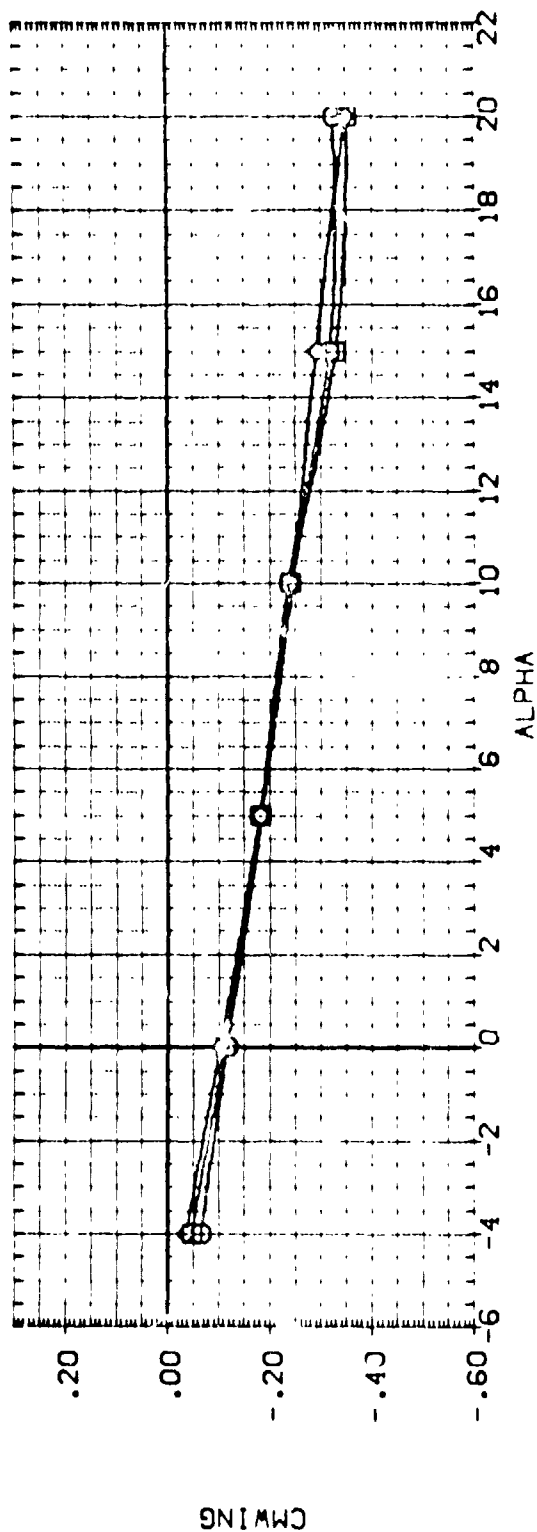


FIG. 29 INTEGRATED FORCE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BDFLAP
 (ADMAG) = .22

| DATA SET SYMBOL | CONFIGURATION | DESCRIPTION | J40 | V87 E18 | ELEVON | M/V8 | PTV/P | BD-FLAP | REFERENCE INFORMATION |
|-----------------|------------------|-------------|-----|---------|--------|------|-------|---------|-----------------------|
| (FDV030) | QAS7B (NAAL 713) | 816 CS F1 | J40 | V87 E18 | 15.00 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV029) | QAS7B (NAAL 713) | 816 CS F1 | J40 | V87 E18 | 15.00 | .125 | 1.500 | -18.000 | LREF 19.2300 IN. |
| (FDV028) | QAS7B (NAAL 713) | 816 CS F1 | J40 | V87 E18 | 15.00 | .125 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | | | | XREF 43.5550 IN. |
| | | | | | | | | | YREF .0000 IN. |
| | | | | | | | | | ZREF -.4050 IN. |
| | | | | | | | | | SCALE .0405 |

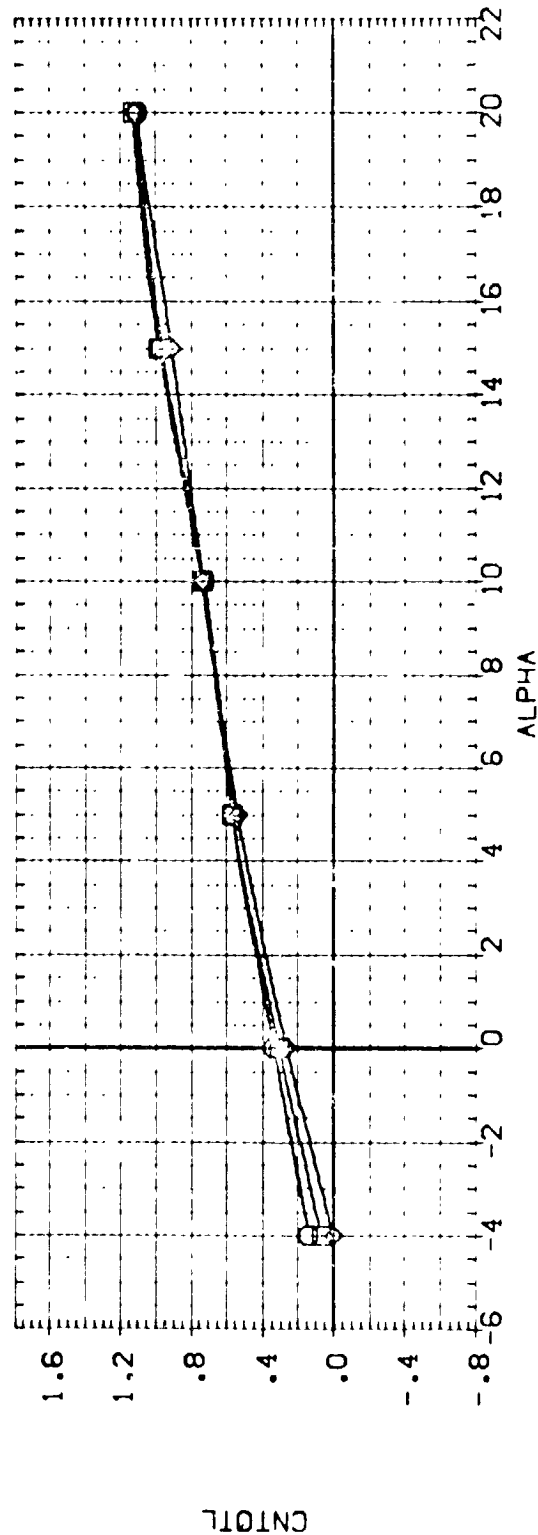
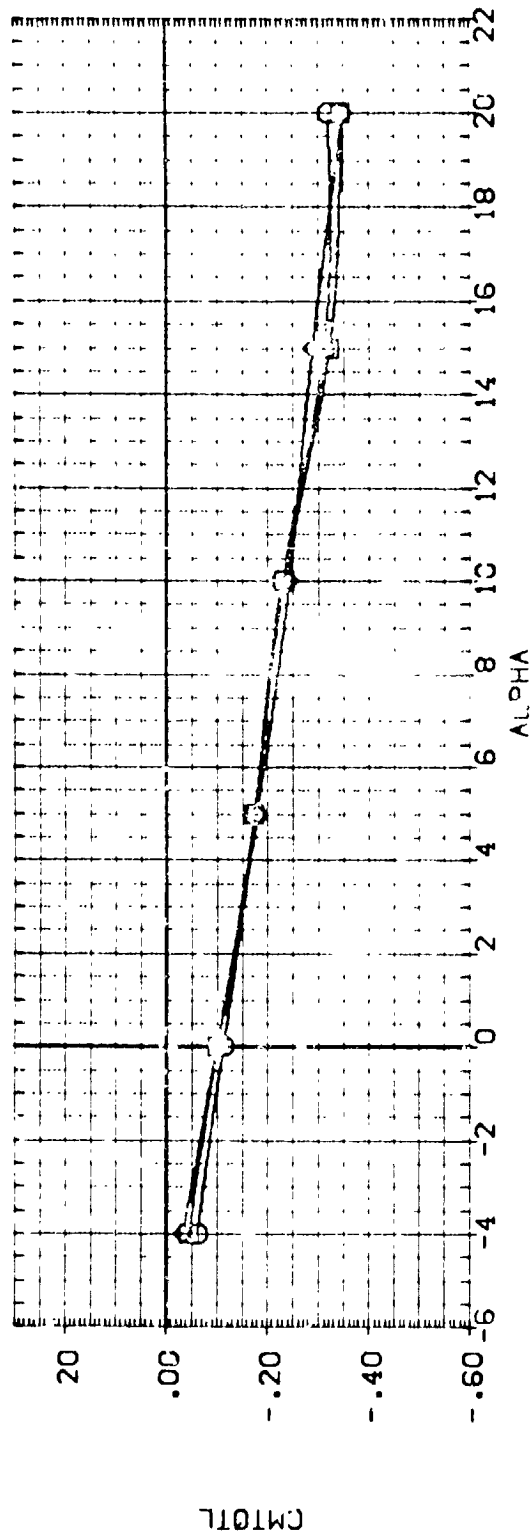


FIG. 29 INTEGRATED FORCE COEFFICIENTS WITH J40 , 15 ELEVEN AND -18 BD-FLAP
 (A)MACH = .20

DATA SET SYMBOL CONFIGURATION DESCRIPTION

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | PTN/P | ELEVON | M/B | BDF LAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|--------|---------|---------|-----------------------|
| (FJ/036) | QASTB (NAAL 713) | 316 CS F1 | 140 | V87 E18 | 18.000 | SPT 4.4120 |
| (FJ/036) | QASTB (NAAL 713) | 816 CS F1 | 140 | V87 E18 | 18.000 | 19.1410 |
| (FJ/034) | QASTB (NAAL 713) | 816 CS F1 | 140 | V87 E18 | 18.000 | 37.1310 |
| | | | | | | 43.1310 |
| | | | | | | 10.000 |
| | | | | | | 1.4000 |
| | | | | | | 1.0105 |

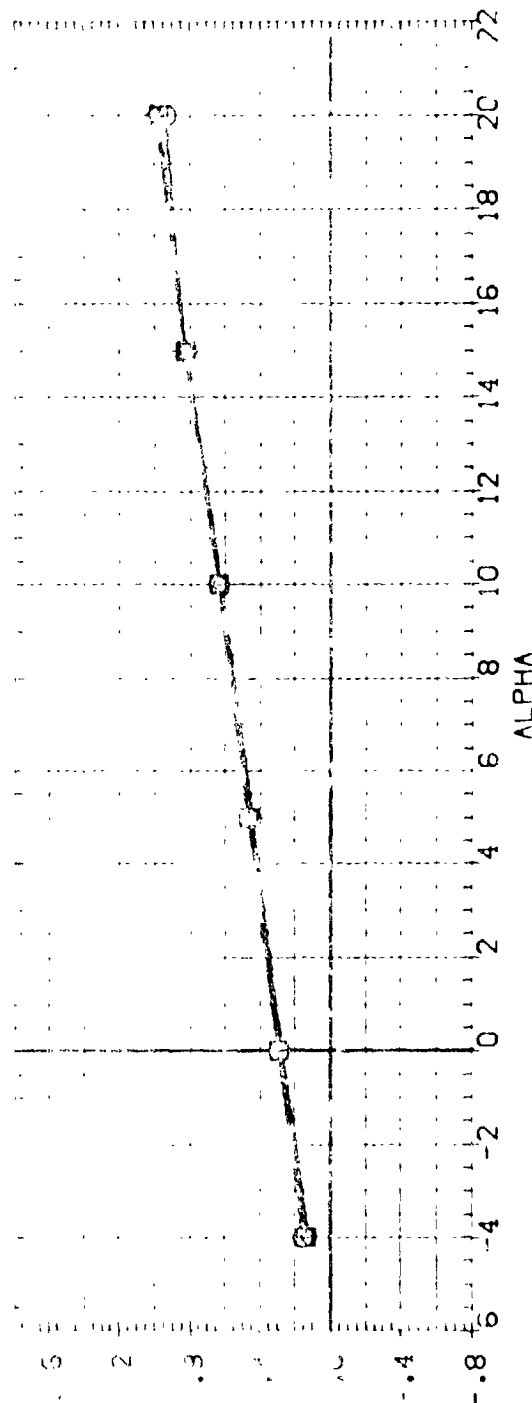
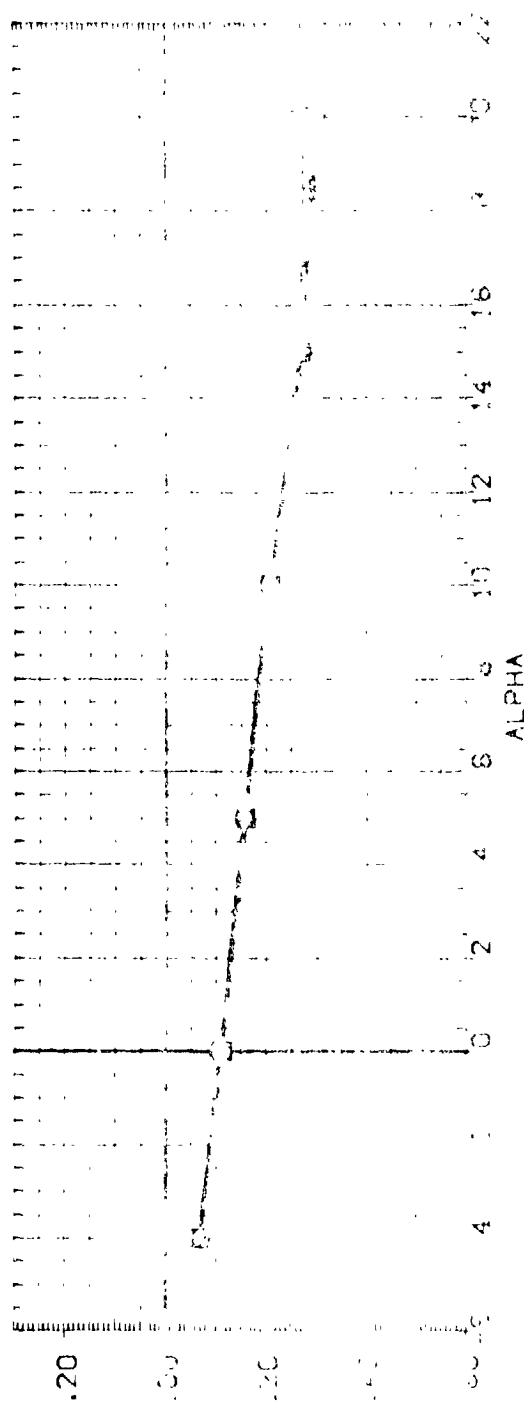


FIG. 29 INTEGRATED FORCE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BDF AP
(M)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | MVB | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|----------------------------|--------|------|-------|---------|-----------------------|
| (FDV036) | 0A578 (NAAL 713) B16 CS F1 | 15.000 | .286 | 1.000 | -18.000 | SREF 4.1120 SQ.FT. |
| (FDV036) | 0A578 (NAAL 713) B16 CS F1 | 15.000 | .286 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDV034) | 0A578 (NAAL 713) B16 CS F1 | 15.000 | .286 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XREF 43.5830 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

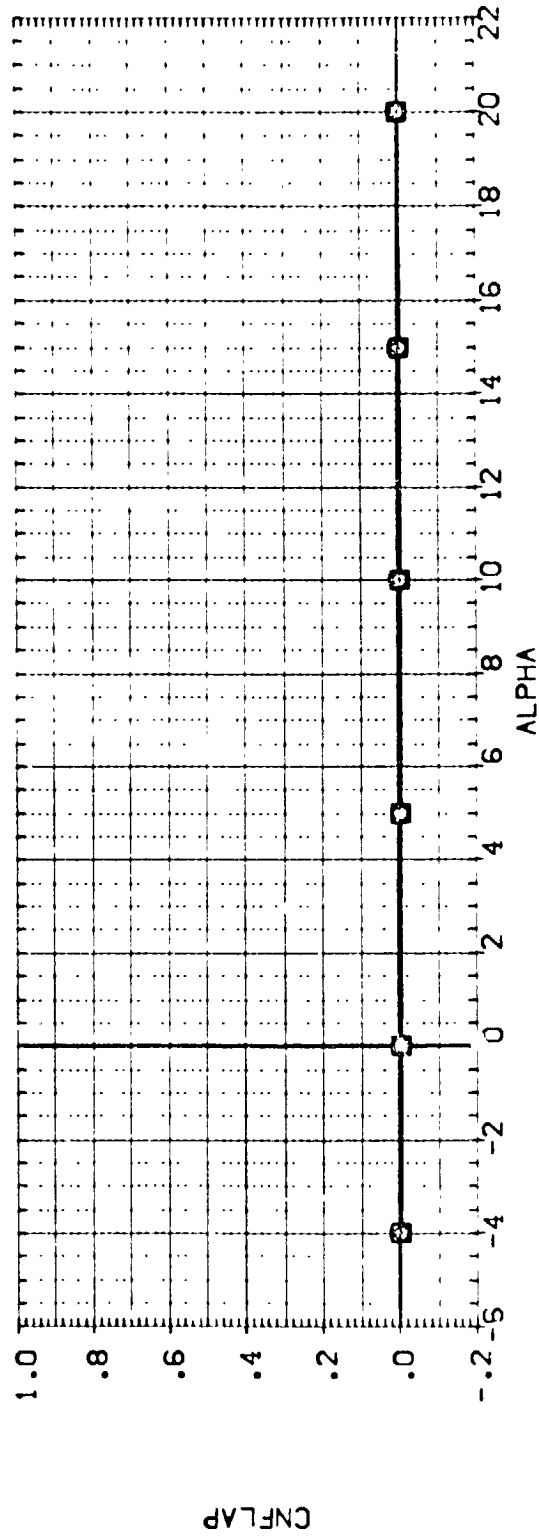
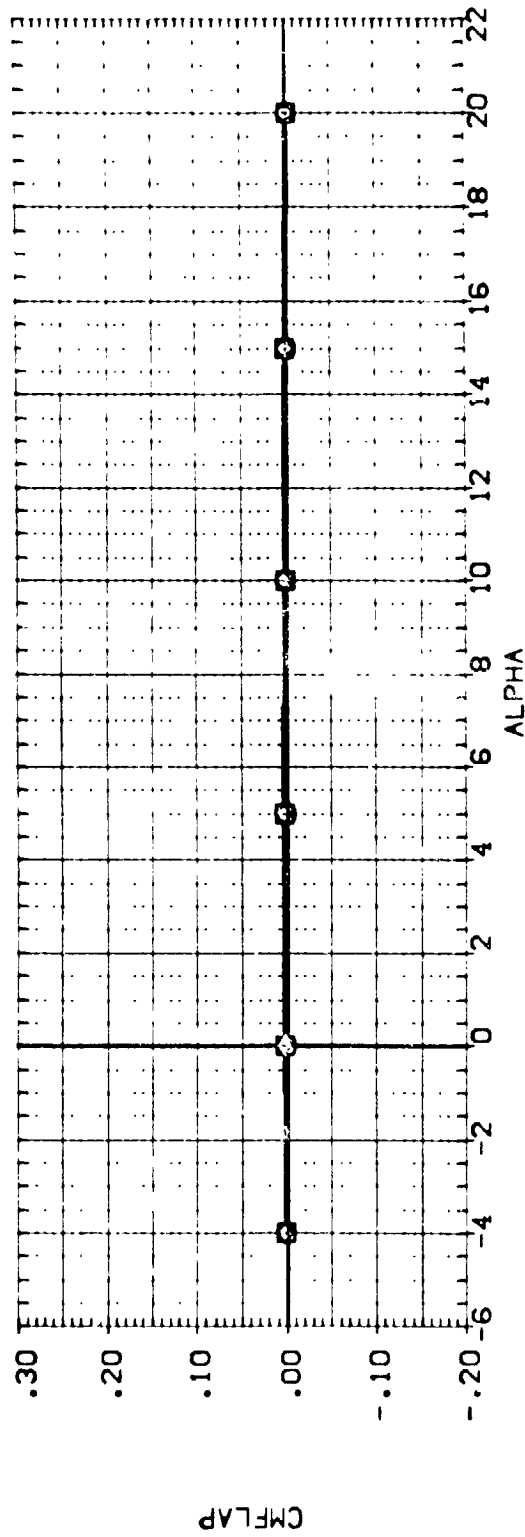


FIG. 29 INTEGRATED FORCE COEFFICIENTS WITH J40 , 15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|----------------------------|--------|------|-------|---------|-----------------------|
| (EDV036) | GA578 (NAAL 713) B15 CS F1 | 15.000 | .286 | 1.000 | -18.000 | SREF 4.4170 SQ.FT |
| (EDV036) | GA578 (NAAL 713) B15 CS F1 | 15.000 | .286 | 1.300 | -18.000 | LREF 19.2370 |
| (EDV034) | GA578 (NAAL 713) B15 CS F1 | 15.000 | .286 | 1.500 | -18.000 | BREF 37.9370 |
| | | | | | | XREF 43.5040 |
| | | | | | | YREF 1.0000 |
| | | | | | | ZREF -1.4050 |
| | | | | | | SCALE .0405 |

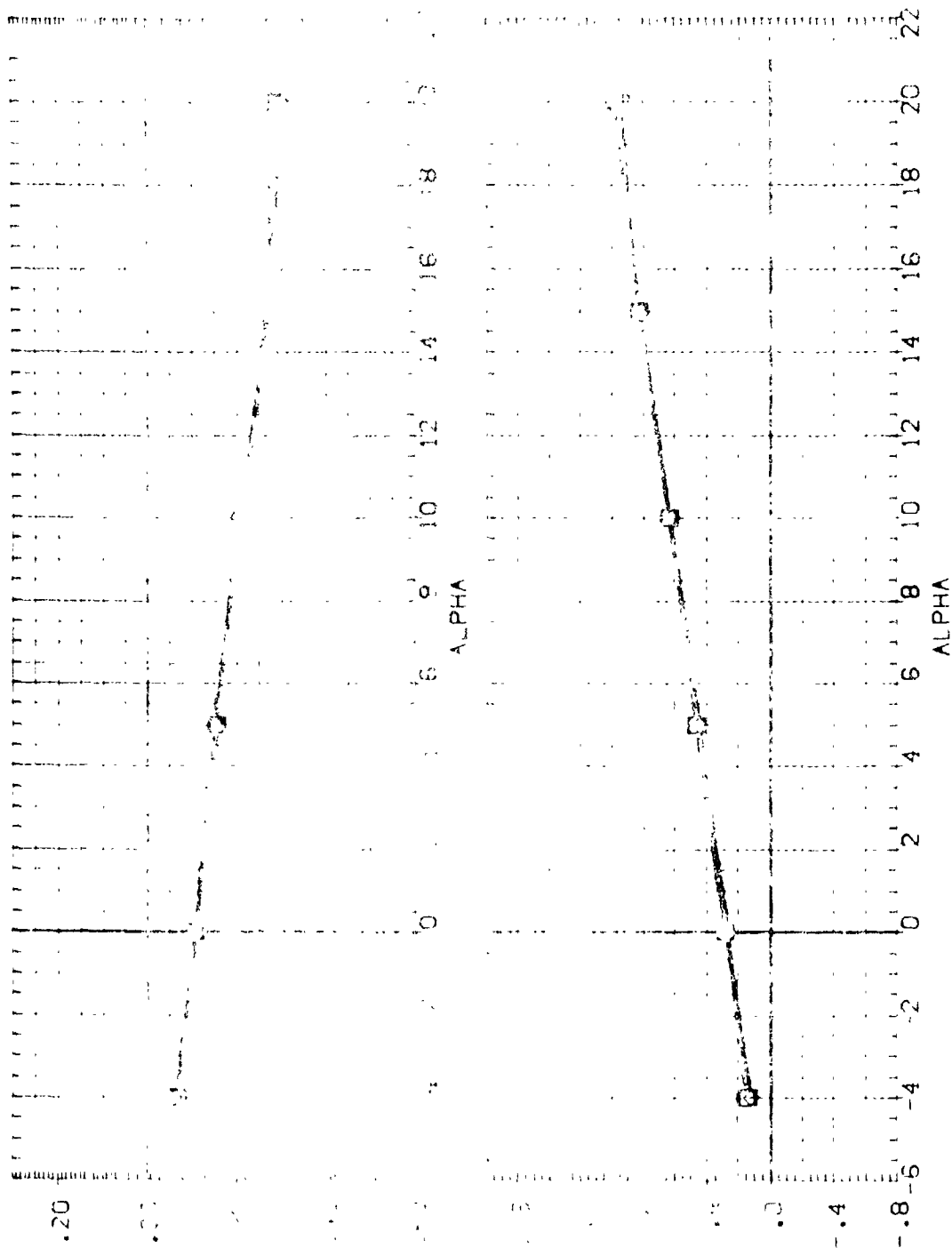


FIG. 29 INTEGRATED FORCE COEFFICIENTS WITH J40, 15 ELEVON AND -18 BOFLAP
CAMAC = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/W | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (FDV056) | QAS78 (NAAL 713) B16 CS F1 J41 V87 E18 | .000 | .038 | 1.000 | -14.000 | SREF 4.4120 SQ.FT. |
| (FDV055) | QAS78 (NAAL 713) B16 CS F1 J41 V87 E18 | .000 | .038 | 1.300 | -16.000 | LREF 19.2300 IN. |
| | | | | | | BREF 37.9350 IN. |
| | | | | | | XREF 43.5880 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

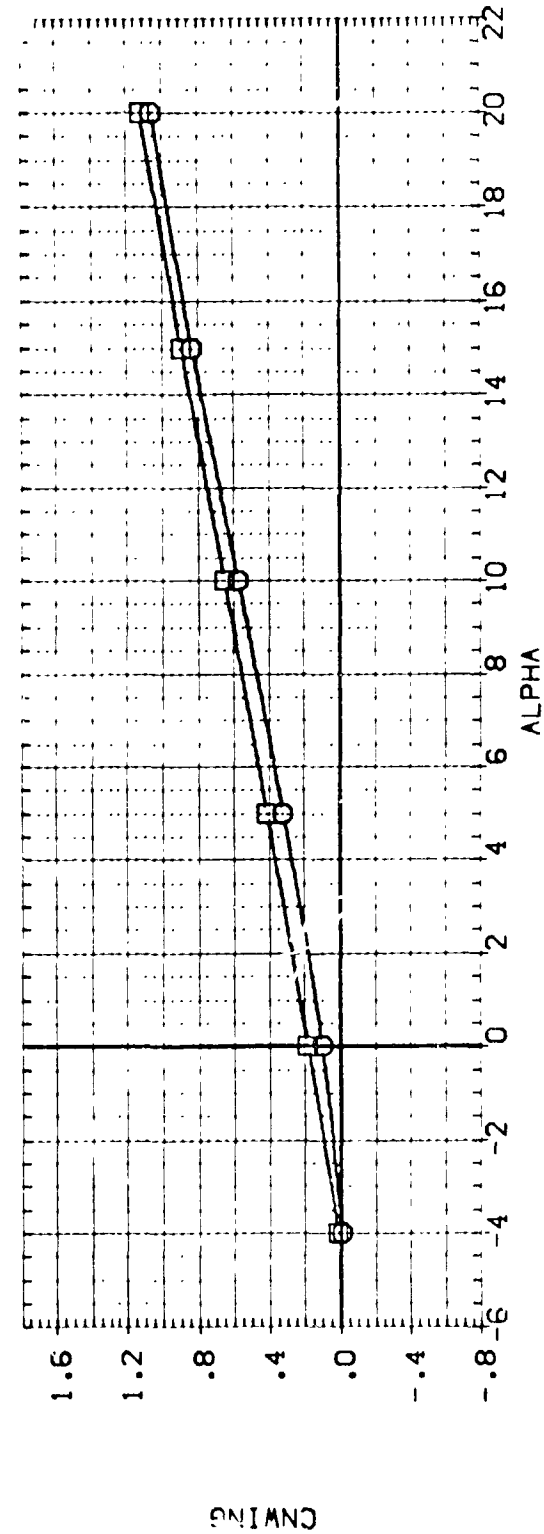
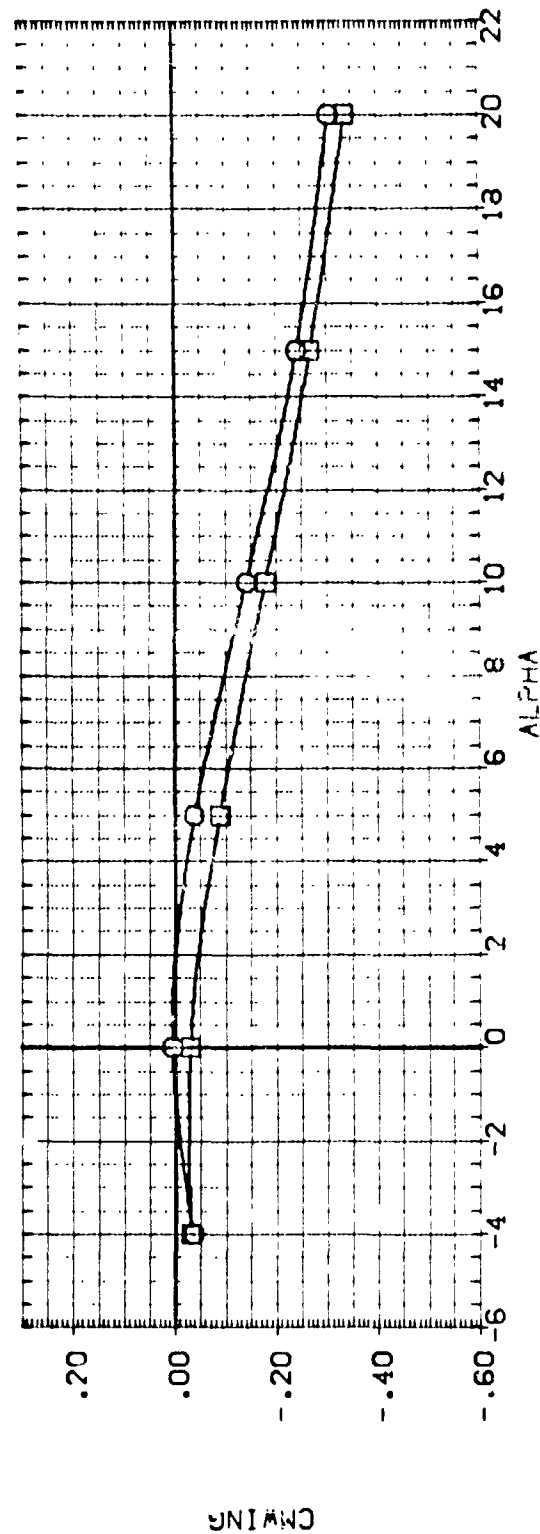


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41 , 0 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| | | | | | | |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (EQUOSS) | QAS7B (NAL 713) | .000 | .039 | 1.000 | -18.000 | SIZE 4.420 |
| (EQUOSS) | QAS7B (NAL 713) | .000 | .035 | 1.000 | -18.000 | LINE 9.2300 |
| | | | | | | AREA 37.8150 |
| | | | | | | YREF 43.5000 |
| | | | | | | ZREF .0000 |
| | | | | | | SCALE -4.000 |
| | | | | | | SCALE .0400 |

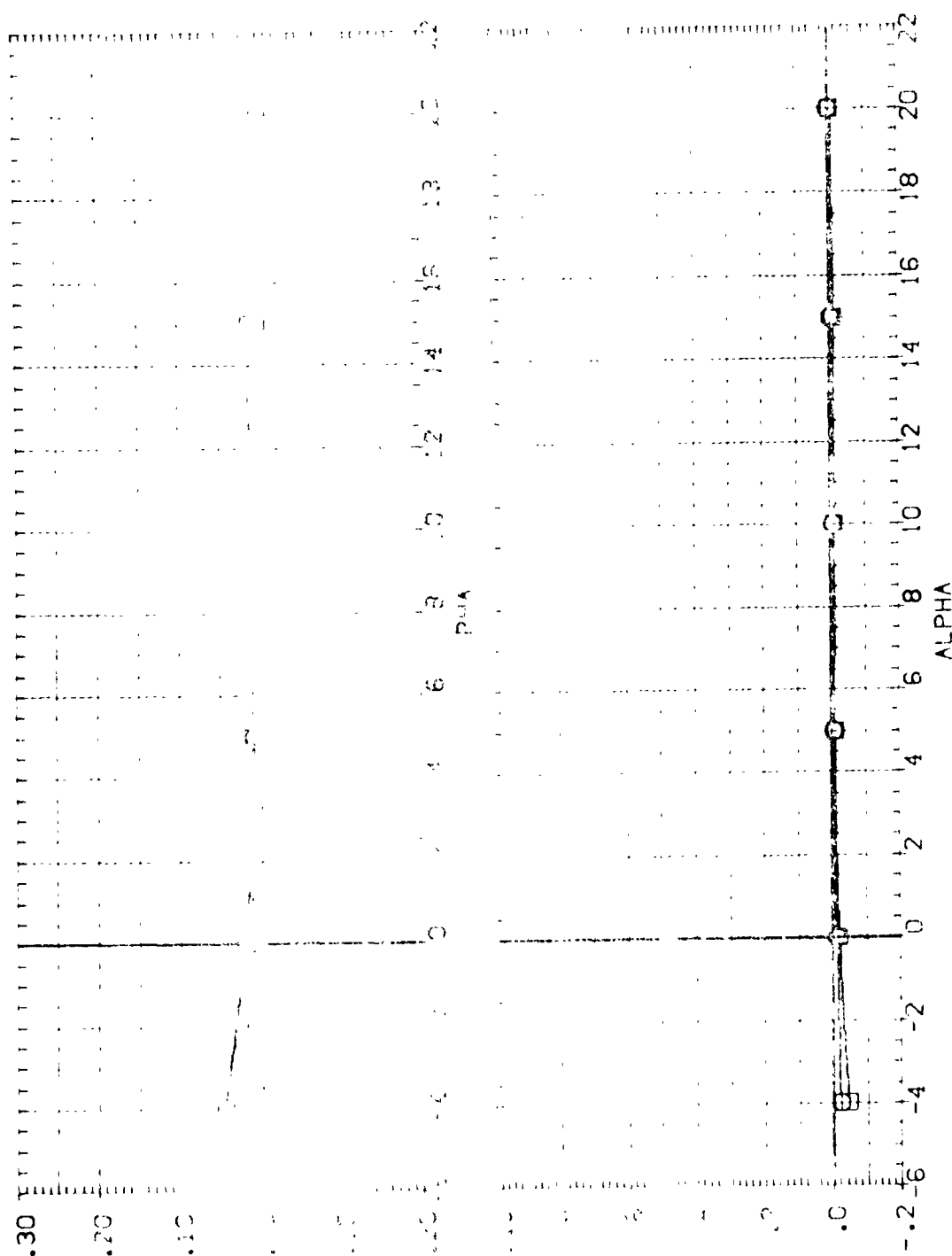


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP
CA/MACH = 0.20

| | | | | | | | | | | | |
|-----------------|---|---------------------------|-----------|--------|------|-------|---------|--------|---------|-----------------------|--|
| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | PTN/P | | BOFLAP | | REFERENCE INFORMATION | |
| (FDV056) | □ | 0A578 (NAL 713) | B16 CS F1 | .000 | .000 | 1.000 | -18.000 | SREF | 4.4120 | 50. FT. | |
| (FDV055) | □ | 0A578 (NAL 713) | B16 CS F1 | .000 | .000 | 1.300 | -18.000 | LREF | 19.2300 | IN. | |
| | | | | .000 | .000 | | | BREF | 37.9350 | IN. | |
| | | | | .000 | .000 | | | XREF | 43.5000 | IN. | |
| | | | | .000 | .000 | | | YREF | .0000 | IN. | |
| | | | | .000 | .000 | | | ZREF | -4.0500 | IN. | |
| | | | | .000 | .000 | | | SCALE | .0405 | | |

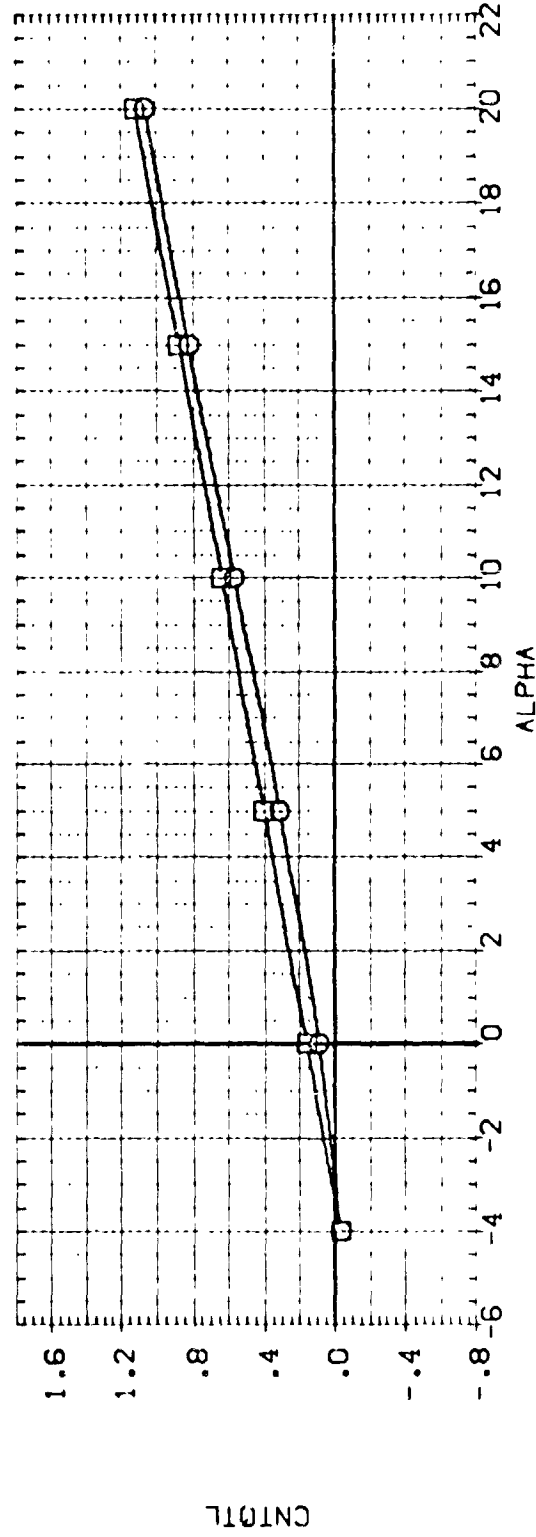
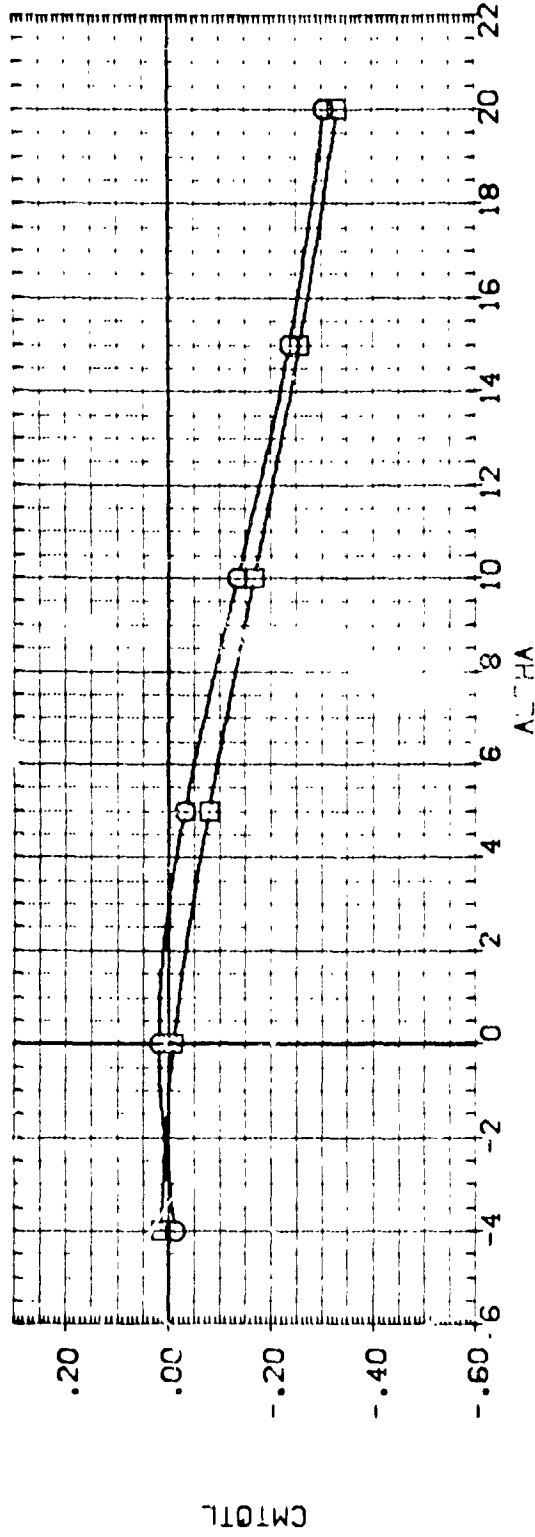


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP
 CAJ MACH = .20

DATA SET SYMBOL: (F2058) (F2057)

CONFIGURATION DESCRIPTION: 3.578 (NAAL 7:13) 3:6 CS F: 3:6 CS F: J41 V87 E18 J41 V87 E18

ELEVON: .000 .000

H/V: .125 .125

PTN/P: 1.000 1.300

BOFLAP: -18.000 -18.000

REFERENCE INFORMATION:

| | | |
|-------|---------|-----|
| SREF | 4.4120 | IN. |
| LREF | 19.1140 | IN. |
| BREF | 37.9840 | IN. |
| XTRP | 43.5000 | IN. |
| YTRP | .0000 | IN. |
| ZTRP | -4050 | IN. |
| SCALE | .0405 | |

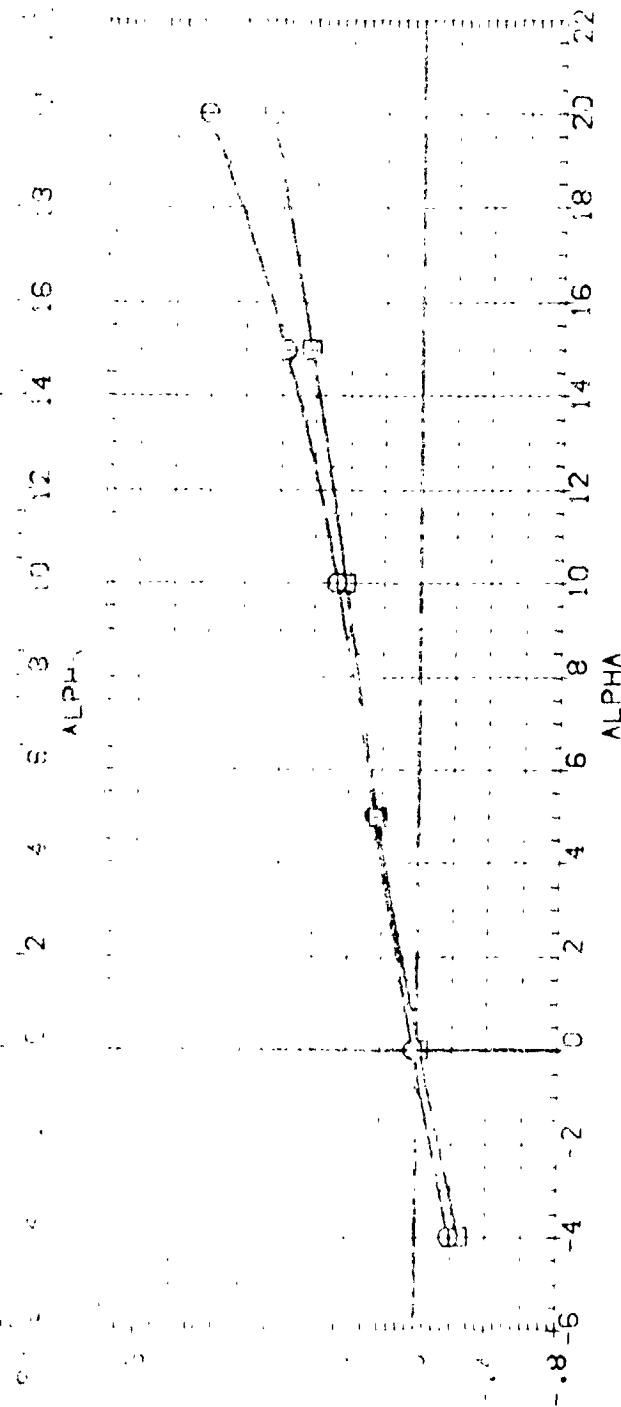
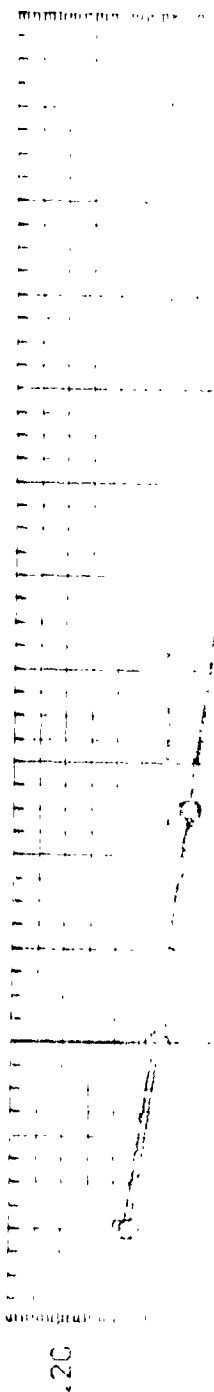


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP

CADMAC = .22

PAGE 134

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|----------------------------|--------|------|-------|---------|-----------------------|
| (EDV058) | 8A578 (NAAL 713) 816 CS F1 | .000 | .125 | 1.000 | -18.000 | SREF 4.4120 50. FT. |
| (EDV057) | 8A578 (NAAL 713) 816 CS F1 | .000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| | | | | | | BREF 37.5350 IN. |
| | | | | | | XREF 43.5530 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

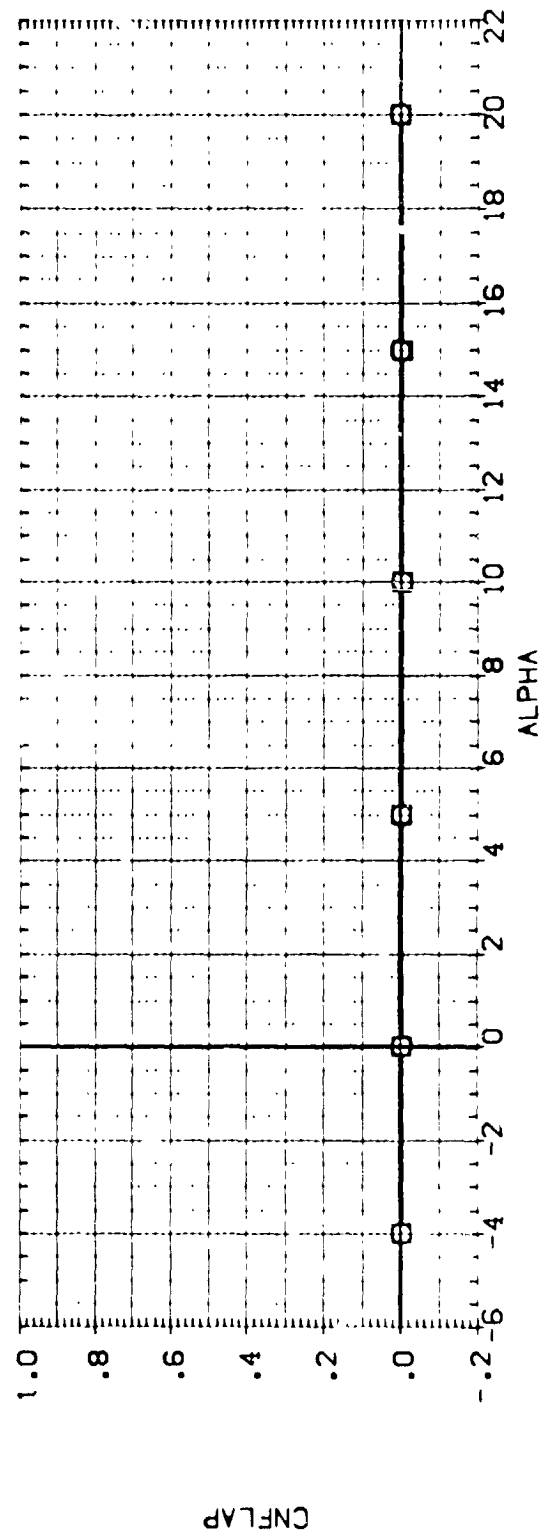
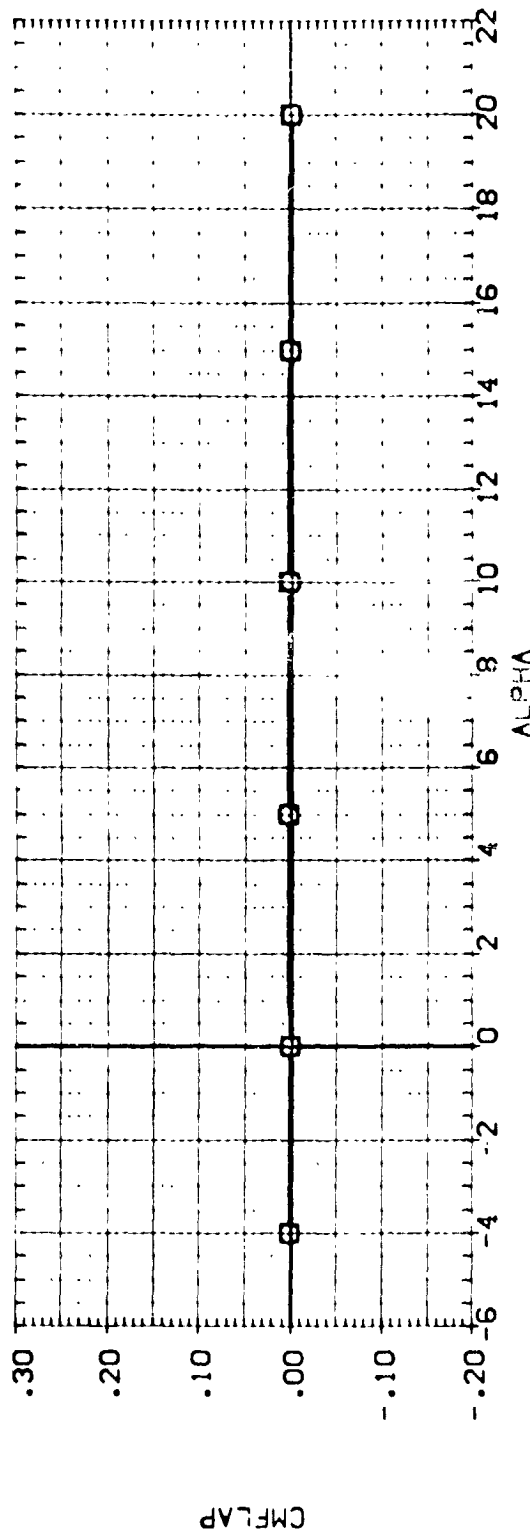


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP
(A)MACH = .20

| | | | | | | |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/R | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (FDV058) | QAS7B (NAL 713) | .000 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV057) | QAS7B (NAL 713) | .000 | .125 | 1.300 | -18.000 | LRFF 19.2300 IN. |
| | | | | | | BRFF 37.9450 IN. |
| | | | | | | XTRP 43.5400 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

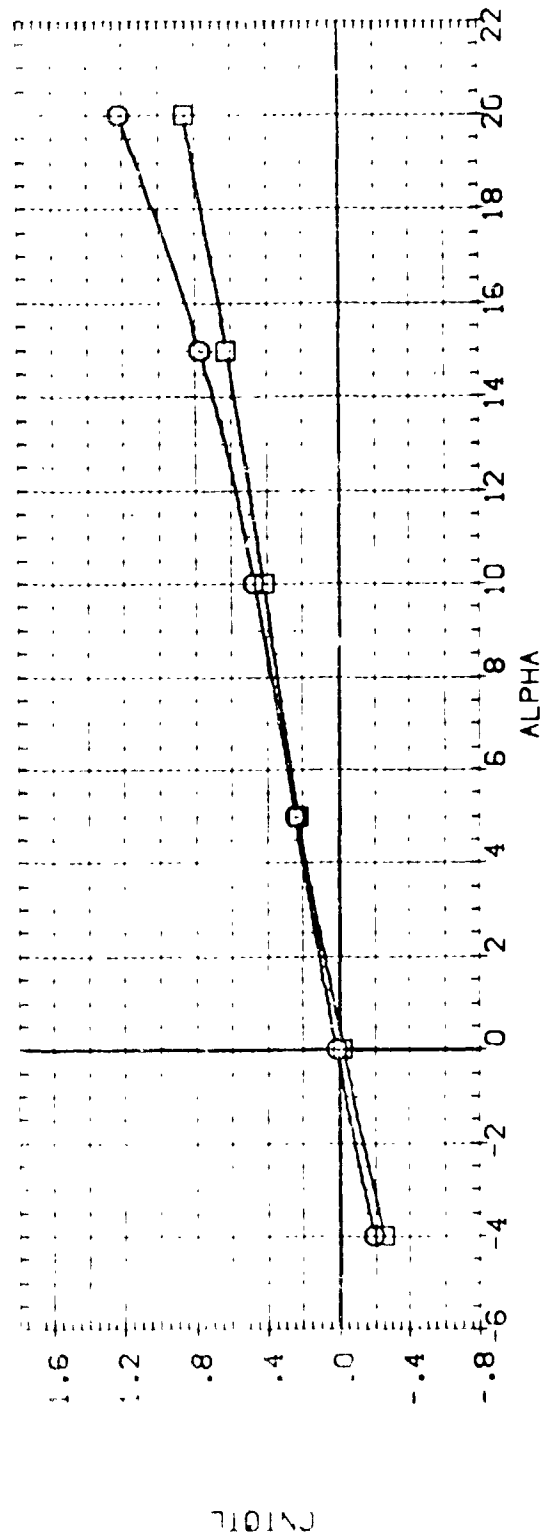
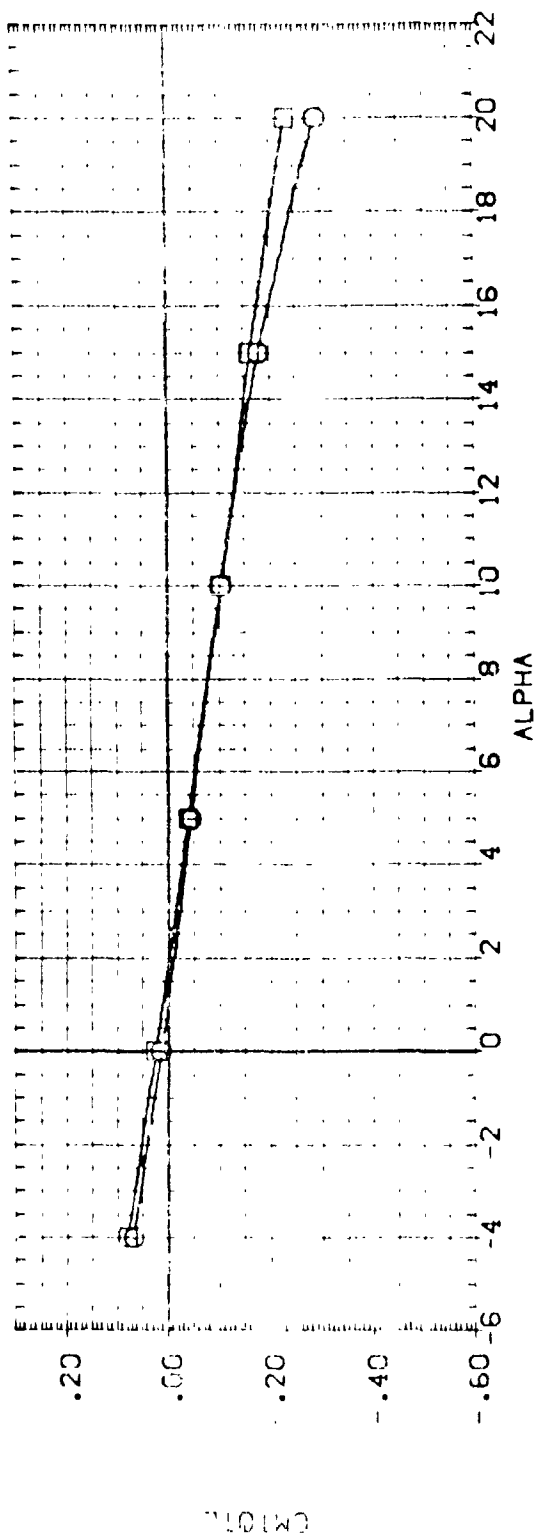


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP
 (MACH = .20) PAGE 136

DATA SET SYMBOL CONFIGURATION DESCRIPTION ELEVON M/R PITCH BOFLAP REFERENCE INFORMATION

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/R | PITCH | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| (FDV053) | 0A-78 (NAAL 713) | .000 | .286 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV052) | 0A-78 (NAAL 713) | .000 | .286 | 1.300 | -18.000 | LREF 19.7300 IN. |
| | | | | | | BREF 37.5350 IN. |
| | | | | | | XREF 43.5580 IN. |
| | | | | | | YREF .100 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

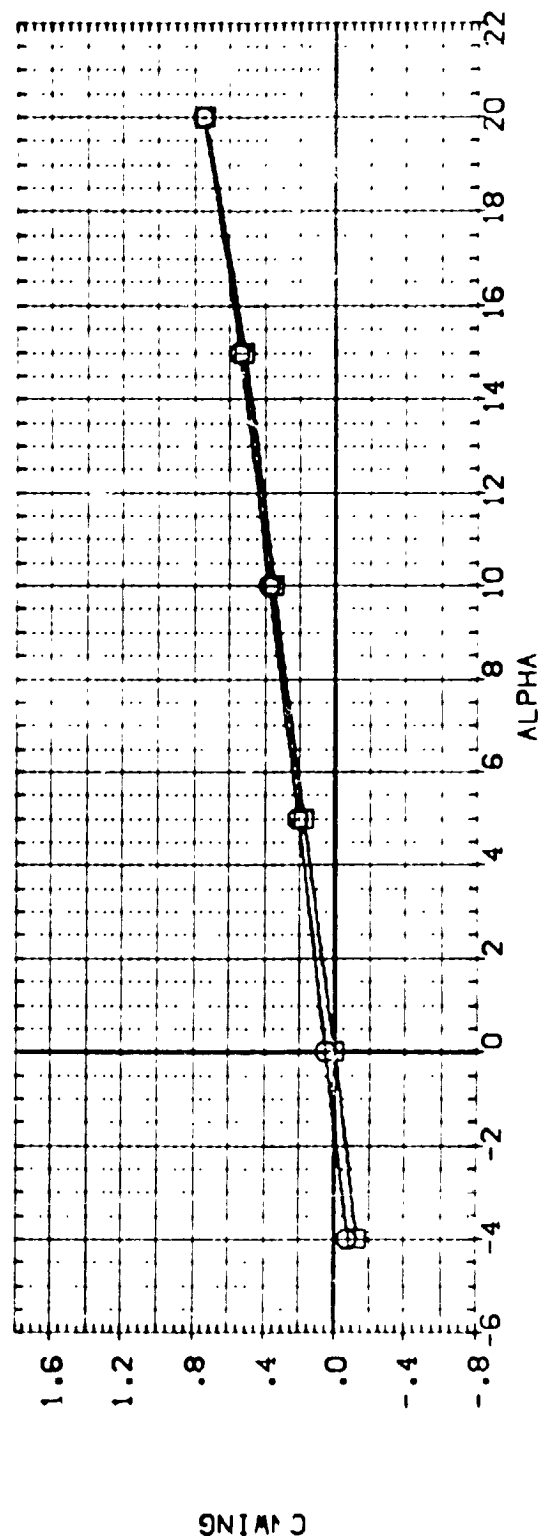
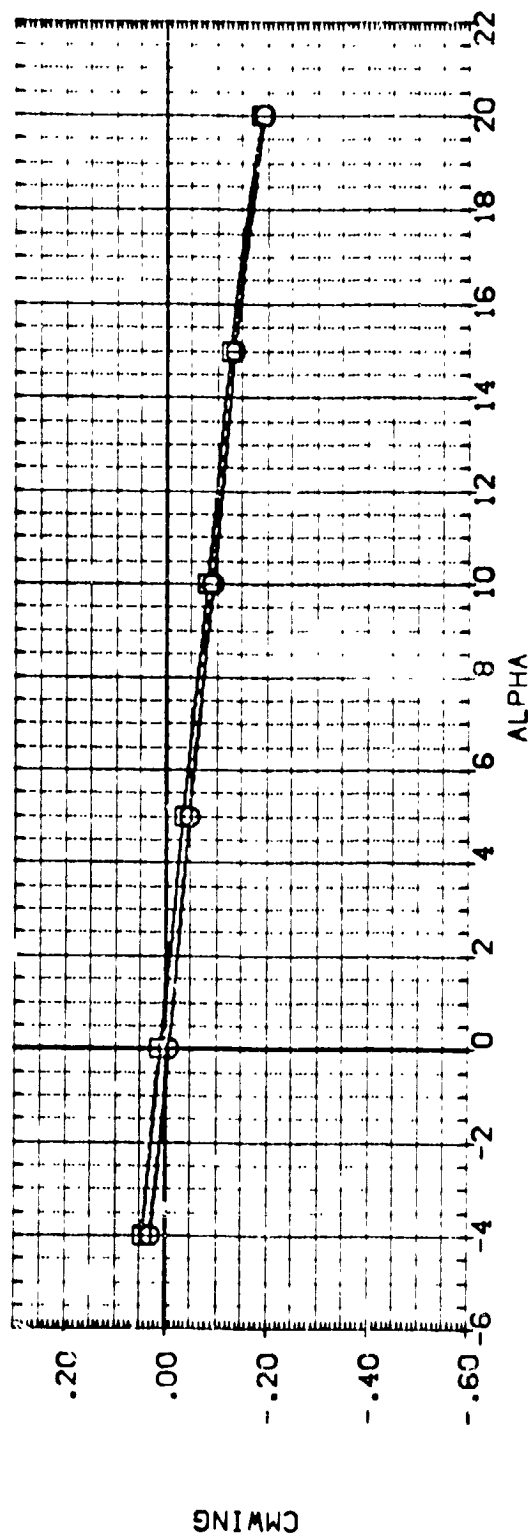


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41, 0 ELEVON AND -18 BOFLAP
(A)MACH = .20

DATA SET SYMBOL CD# IQUATION DESCRIPTION
 (PCV053) 0 CAS7B (WAL 713) 816 CS F1 J41 V87 E18
 (PDV052) 0 CAS7B (WAL 713) 816 CS F1 J41 V87 E18

ELEVON HVB PTNP BOFLAP
 .000 .286 1.000 -18.000
 .000 .286 1.300 -18.000
 SREF 4.4120 50.FT.
 LREF 19.2300 IN.
 BREF 37.9300 IN.
 XMRP 43.5100 IN.
 YMRP .0000 IN.
 ZMRP -1.0000 IN.
 SCALE .0405

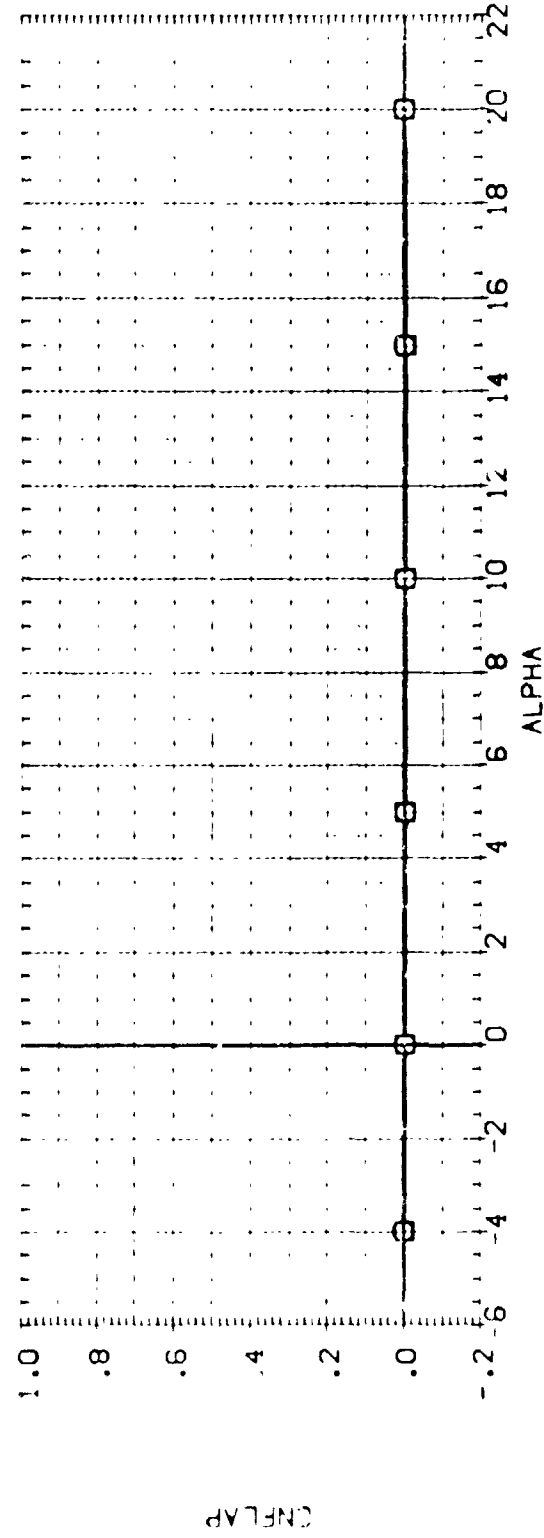
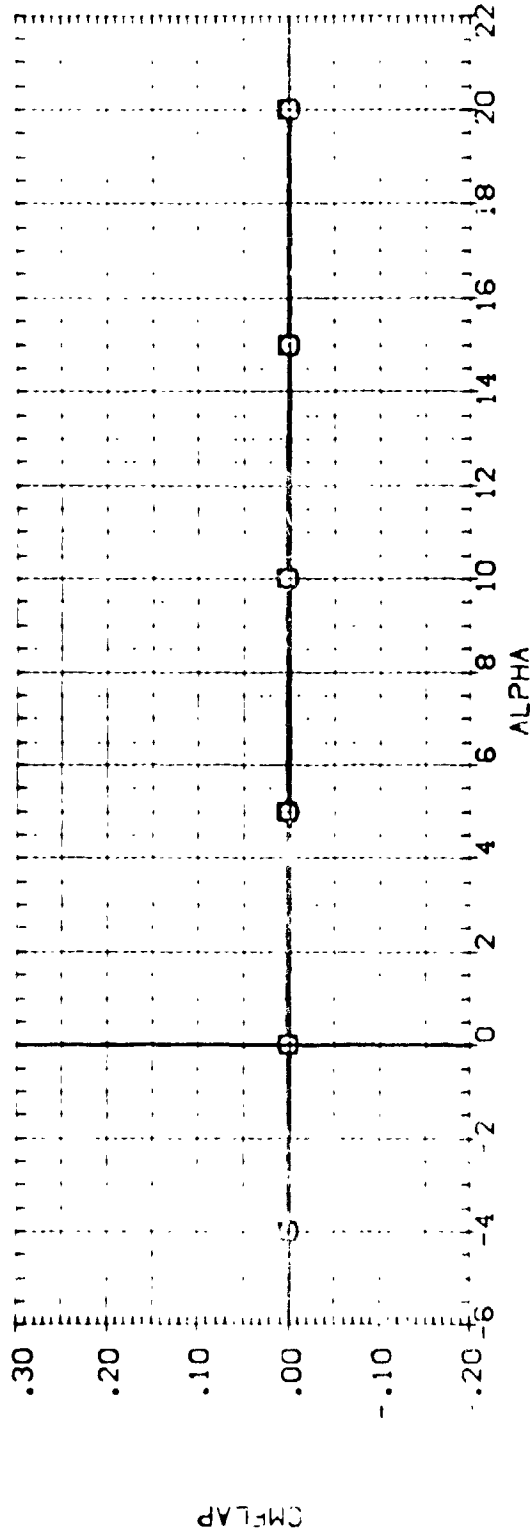


FIG. 30 INTEGRATED FORCE COEFFICIENTS WITH J41 . 0 ELEVON AND -18 BOFLAP
 (A)MACH = .20 PAGE 138

DATA SET SPEED CONFIGURATION DESCRIPTION
 (02049) 14 0457B (00000000) 8 6 CS F1 14 14 0457 E18
 (00000000) 0457B (00000000) 8 6 CS F1 14 14 0457 E18

ELEVON
 15.000
 15.000

HVB
 0.38
 0.38

PINUP
 1.000
 1.300

BOCLAP
 18.000
 18.000

REFERENCE INFORMATION
 SREF 4.400
 LREF 9.000
 UREF 9.000
 MREF 9.000
 ZREF 9.000
 SCALE 10400

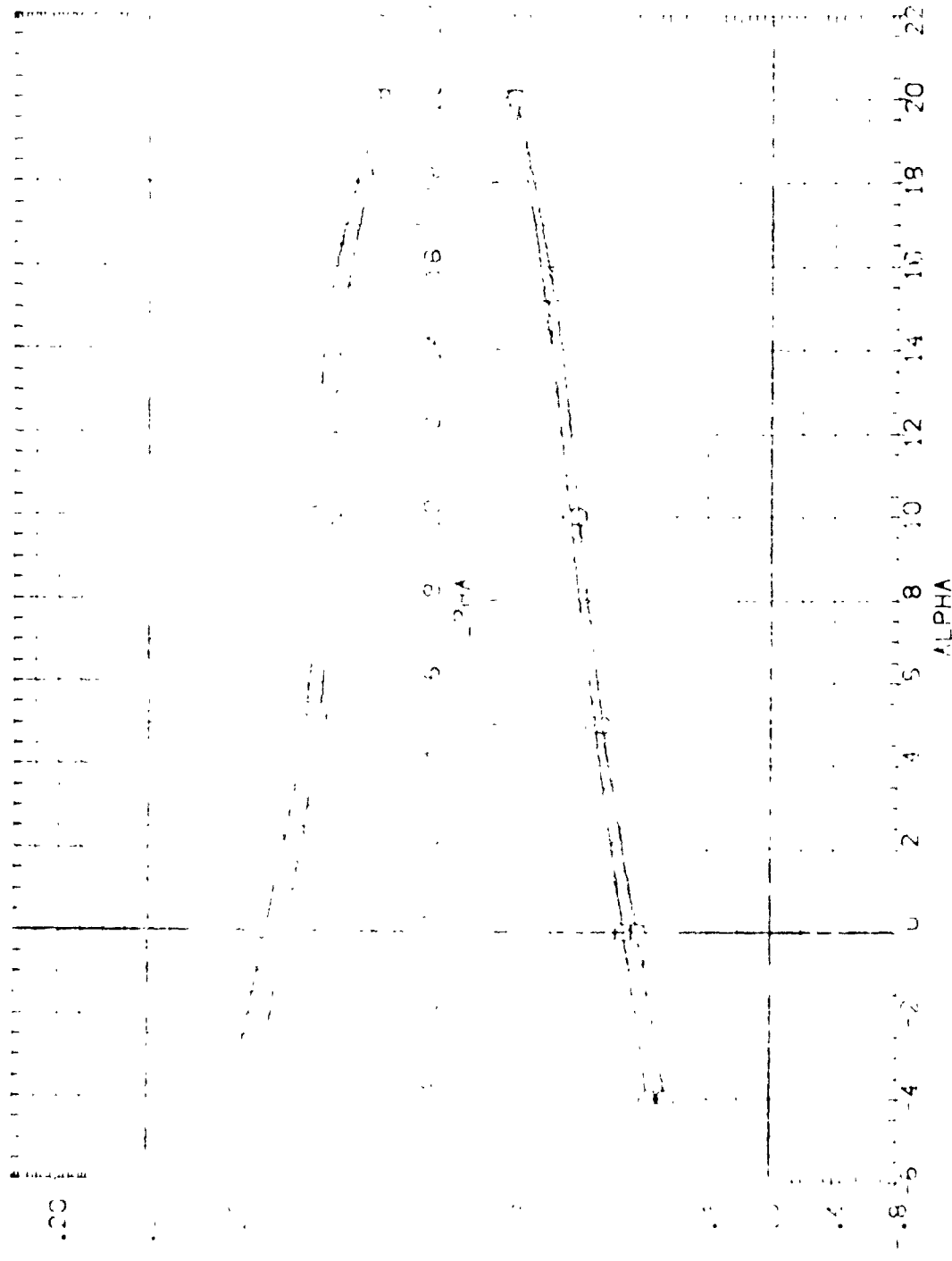


FIG. 3: INTEGRATED FORCE COEFFICIENTS WITH 141, 15 ELEVON AND 18 BOCLAP
 0457B (00000000) 0457B (00000000) 8 6 CS F1 14 14 0457 E18

| | | | | | | |
|----------------|--|--------|------|-------|---------|-----------------------|
| DATA SET SYMB. | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTN/P | BDFLAP | REFERENCE INFORMATION |
| (FDV049) | 8A57B (NAAL 713) 816 CS F1 J41 V87 E18 | 15.000 | .039 | 1.000 | -18.000 | SREF 4.4120 50.FT. |
| (FDV048) | 8A57B (NAAL 713) 816 CS F1 J41 V87 E18 | 15.000 | .039 | 1.300 | -18.000 | LREF 19.2300 IN. |
| | | | | | | BREF 37.9350 IN. |
| | | | | | | XTRP 43.5000 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

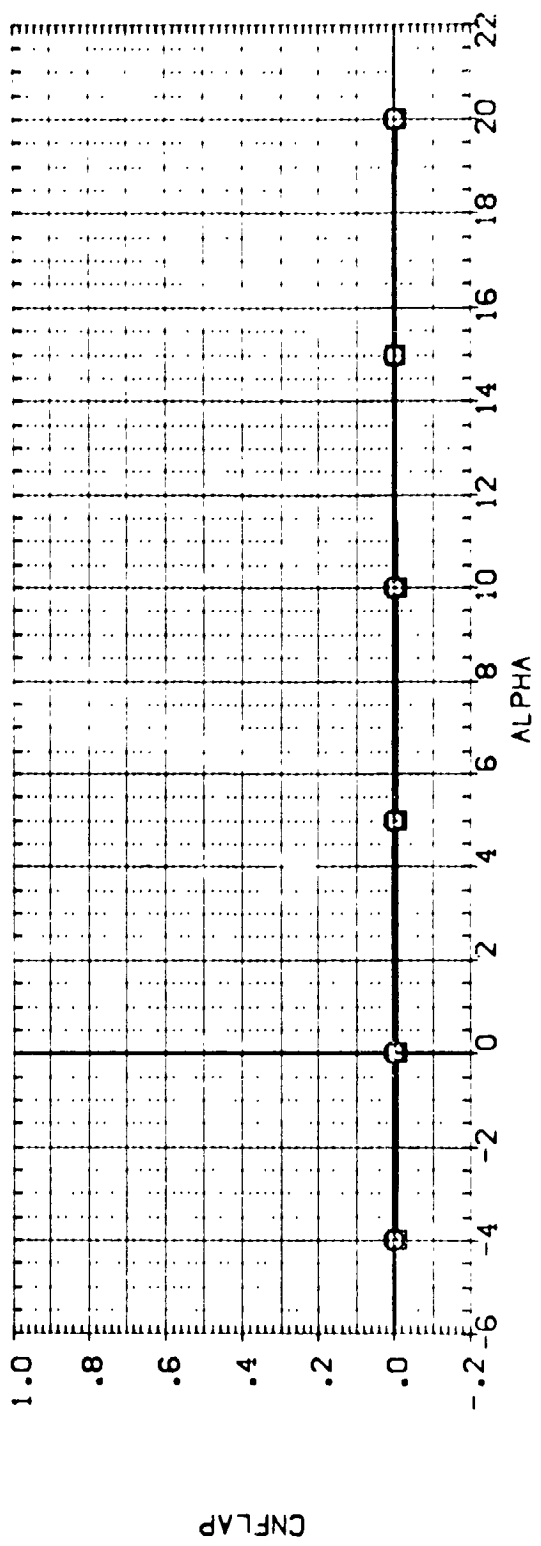
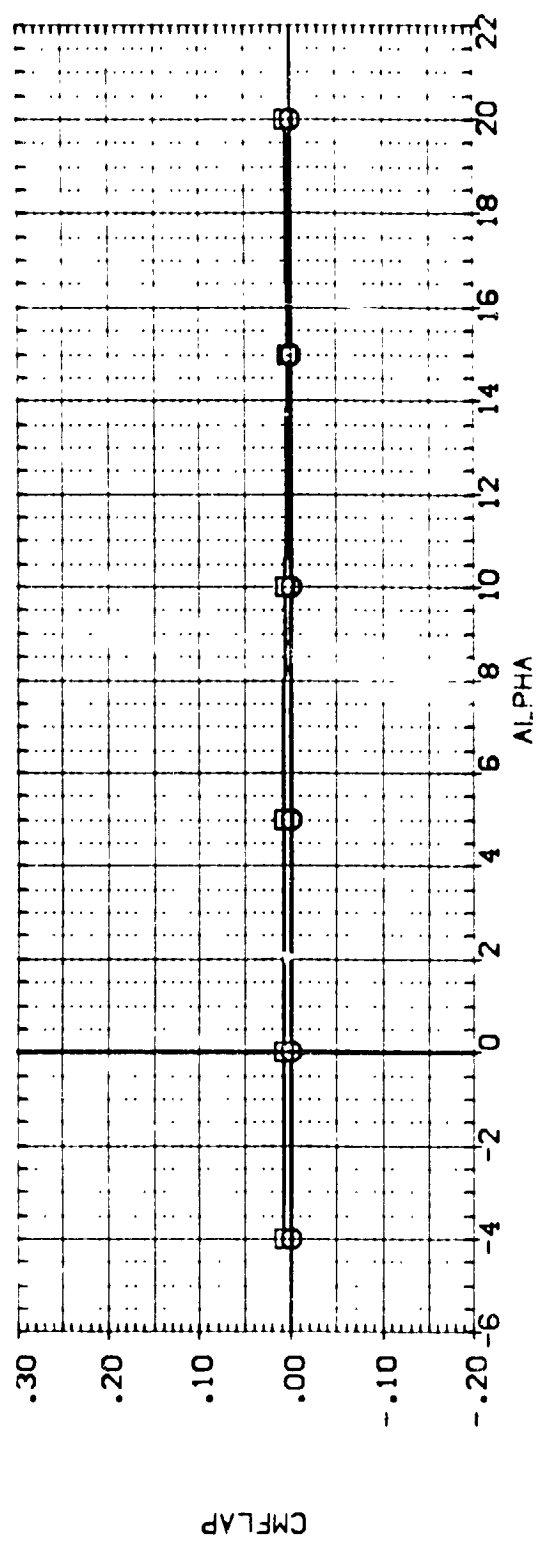


FIG. 31 INTEGRATED FORCE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BDFLAP
 (A)MACH = .20 PAGE 141

| | | | | | | |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTN/P | BDFLAP | REFERENCE INFORMATION |
| (FDV049) | QAS7B (NAAL 713) | 15.000 | .038 | 1.000 | -18.000 | SREF 4.410 |
| (FDV048) | QAS7B (NAAL 713) | 15.000 | .038 | 1.300 | -18.000 | LREF 19.250 |
| | | | | | | BREF 37.950 |
| | | | | | | XREF 43.500 |
| | | | | | | YREF 10.000 |
| | | | | | | ZREF -4.050 |
| | | | | | | SCALE .0405 |

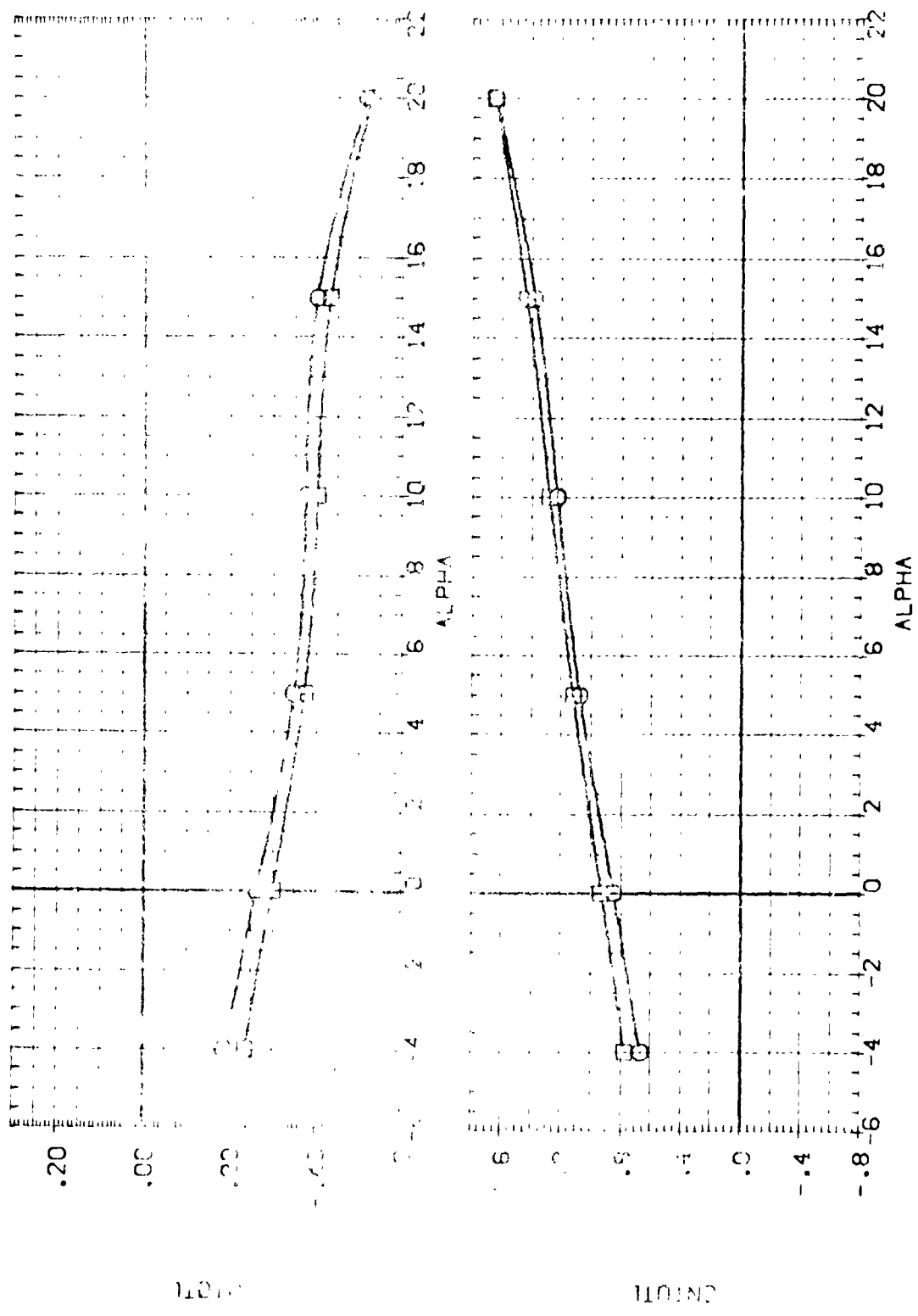


FIG. 31 INTEGRATED FORCE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BDFLAP
 (ADMAC) = .20

| | | | | | | | | | | | | | |
|-----------------|---|---------------------------|-----------|--------|---------|--------|------|-------|---------|--------|---------|-----------------------|--|
| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | H/V | | PTN/P | | BDFLAP | | REFERENCE INFORMATION | |
| (FDV047) | 8 | QAS7B (NAL 713) | 816 CS F1 | J41 | V87 E18 | 15.000 | .125 | 1.000 | -18.000 | SREF | 4.4120 | 50. FT. | |
| (FDV046) | 8 | QAS7B (NAL 713) | 816 CS F1 | J41 | V87 E18 | 15.000 | .125 | 1.300 | -18.000 | LREF | 19.2300 | IN. | |
| | | | | | | | | | | BREF | 37.9350 | IN. | |
| | | | | | | | | | | XTRP | 42.5980 | IN. | |
| | | | | | | | | | | YTRP | .0000 | IN. | |
| | | | | | | | | | | ZTRP | -4.0520 | IN. | |
| | | | | | | | | | | SCALE | .0405 | | |

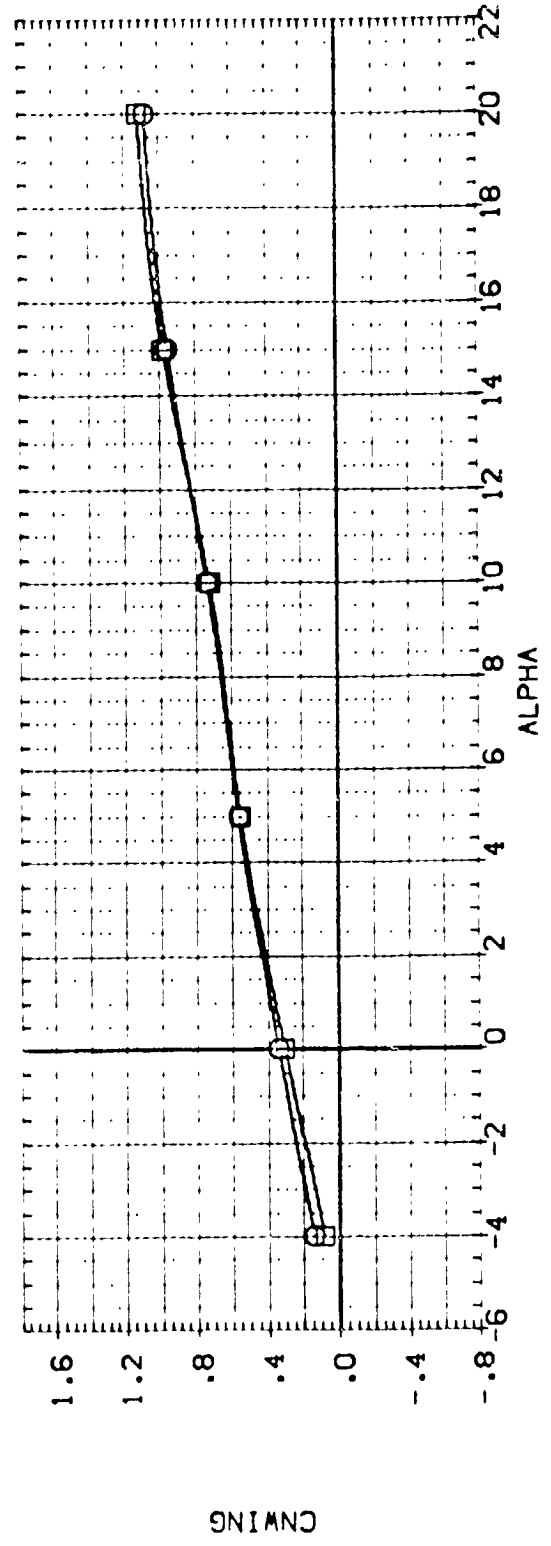
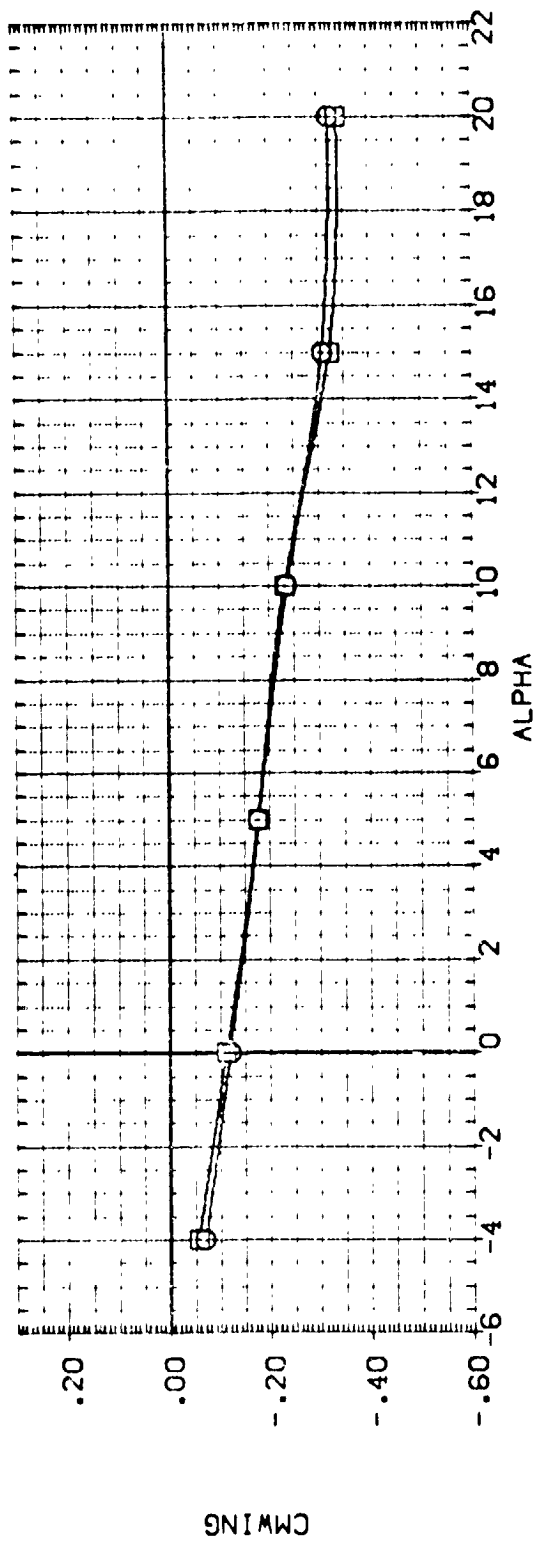


FIG. 31 INTEGRATED FORCE COEFFICIENTS WITH J41 . 15 ELEVON AND -18 BDFLAP
 (A)MACH = .20

| | | | | | | |
|-----------------|----------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (FDV047) | QAS7B (NAAL 713) 816 CS F1 | 15.000 | .125 | 1.000 | -18.000 | SREF 4.4120 50.F. |
| (FDV046) | QAS7B (NAAL 713) 816 CS F1 | 15.000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| | | | | | | BREF 37.9350 IN. |
| | | | | | | XTRP 43.5880 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

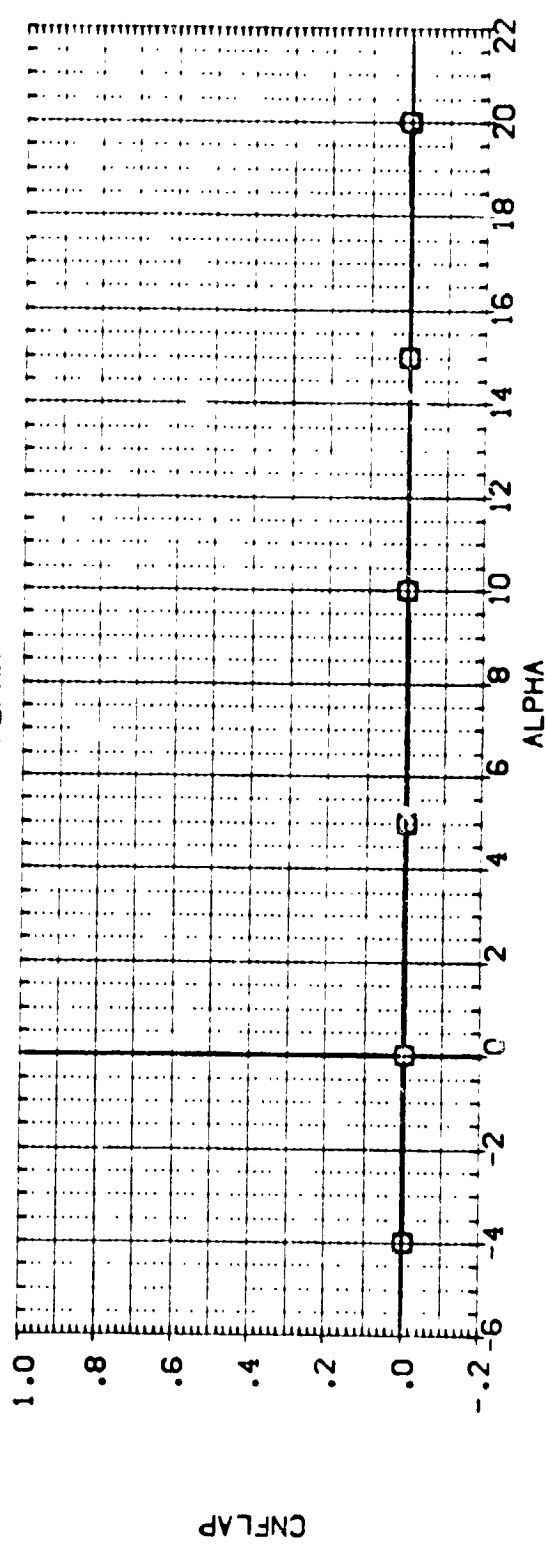
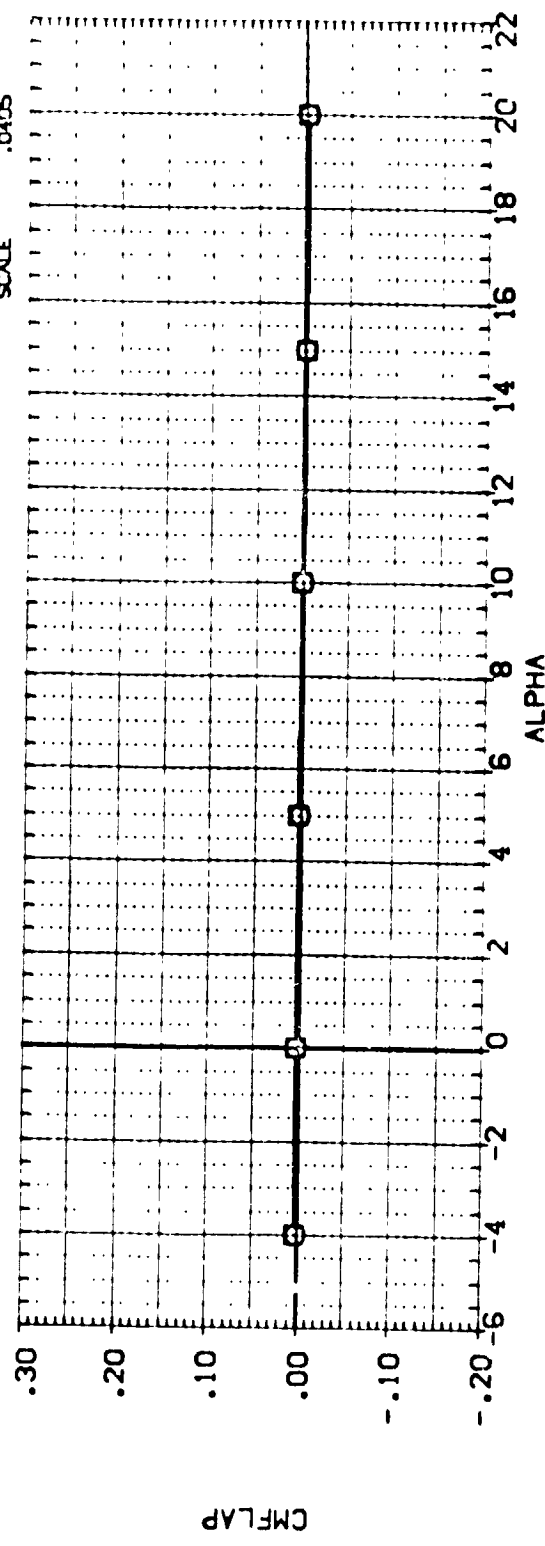


FIG. 31 INTEGRATED FORCE COEFFICIENTS WITH J41 , 15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| | | | | | | |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/R | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (FDV047) | QAS7B (NAL 713) 816 CS FI | 15.000 | .125 | 1.000 | -18.000 | SREF 4.4120 50. FT. |
| (FDV046) | QAS7B (NAL 713) 816 CS FI | 15.000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| | | | | | | BREF 37.9350 IN. |
| | | | | | | XREF 43.5300 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

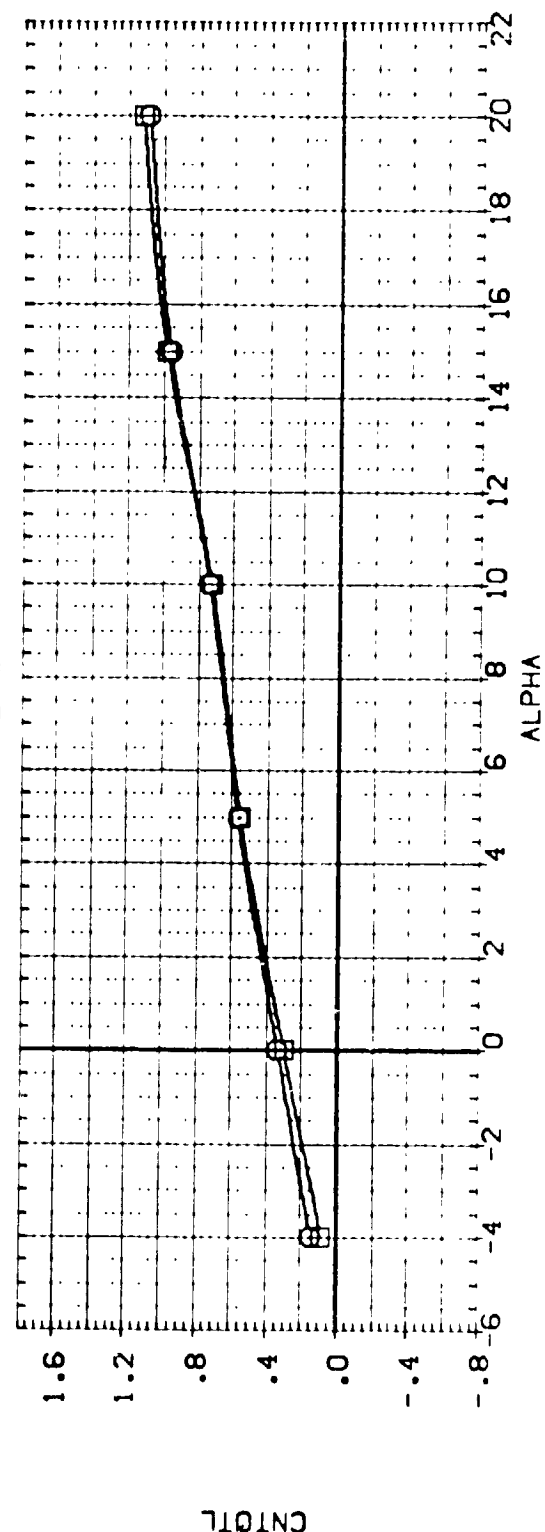
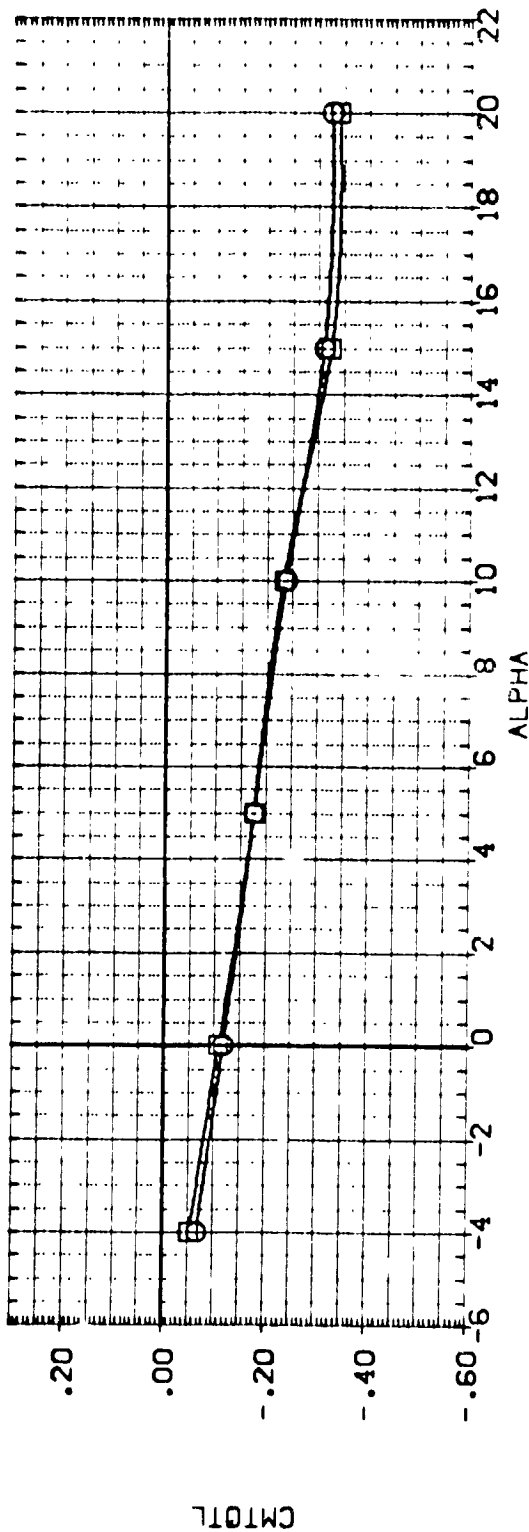


FIG. 31 INTEGRATED FORCE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| | | | | | | | | | | | | | |
|-----------------|----------|---------------------------|-----------|--------|---------|--------|------|-------|---------|--------|---------|-----------------------|--|
| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | H/V | | PTN/P | | BDFLAP | | REFERENCE INFORMATION | |
| (FDV051) | (FDV050) | QAS7B (NAL 713) | B16 CS F1 | J41 | V87 E18 | 15.000 | .266 | 1.000 | -18.000 | SREF | 4.4120 | SQ.FT. | |
| | | QAS7B (NAL 713) | B16 CS F1 | J41 | V87 E18 | 15.000 | .266 | 1.300 | -18.000 | LREF | 19.2300 | IN. | |
| | | | | | | | | | | BREF | 37.1330 | IN. | |
| | | | | | | | | | | XMRP | 43.5000 | IN. | |
| | | | | | | | | | | YMRP | .0000 | IN. | |
| | | | | | | | | | | ZMRP | -.4050 | IN. | |
| | | | | | | | | | | SCALE | .0405 | | |

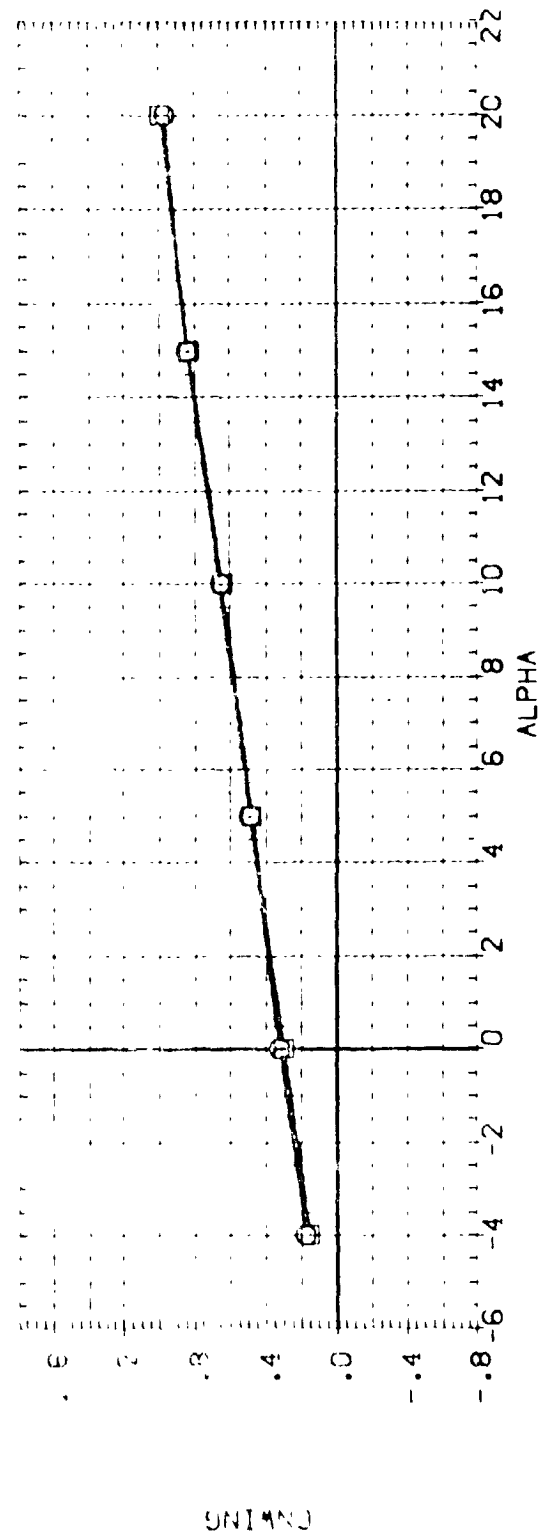
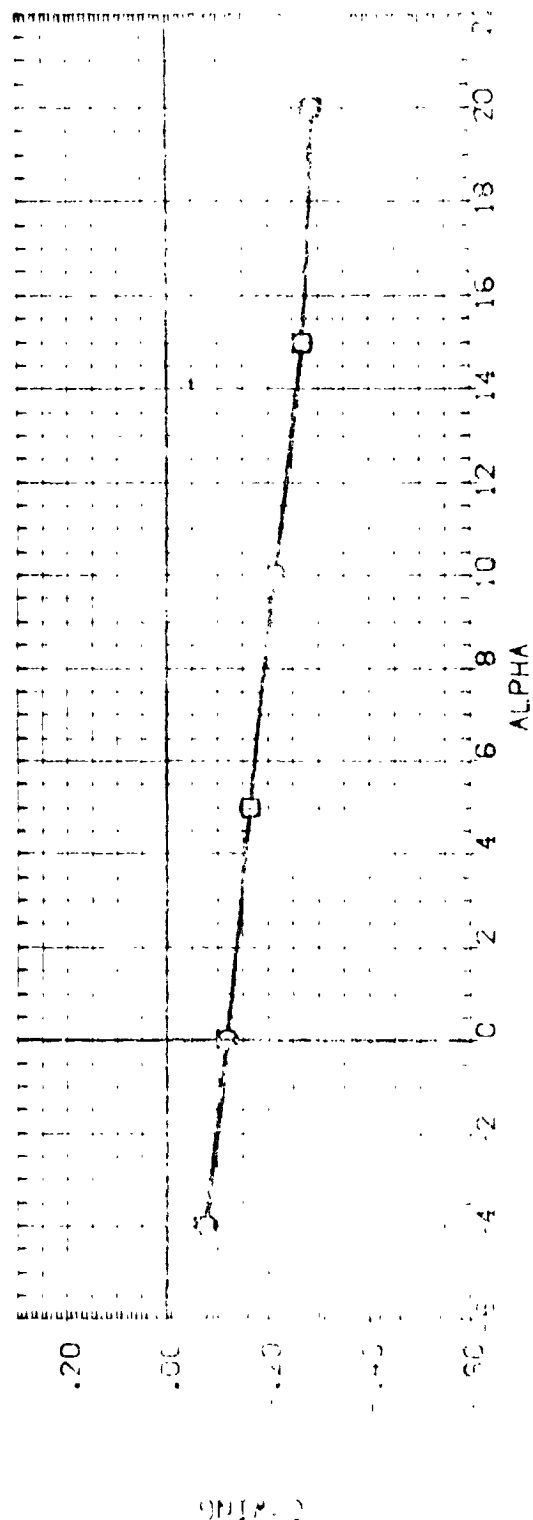


FIG. 31 INTEGRATED FORCE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BDFLAP
 (MACH = .20)

| | | | | | | |
|-----------------|---|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (EDVCS1) | QAS7B (NAVAL 713) B16 CS F1 J41 V67 E18 | 15.000 | .286 | 1.000 | -18.000 | SREF 4.4120 SC.FT. |
| (EDVCS0) | QAS7B (NAVAL 713) B16 CS F1 J41 V67 E18 | 15.000 | .286 | 1.300 | -18.000 | LREF 19.2300 |
| | | | | | | BREF 37.9500 |
| | | | | | | XREF 43.5000 |
| | | | | | | YREF .0000 |
| | | | | | | ZREF -4050 |
| | | | | | | SCALE .0405 |

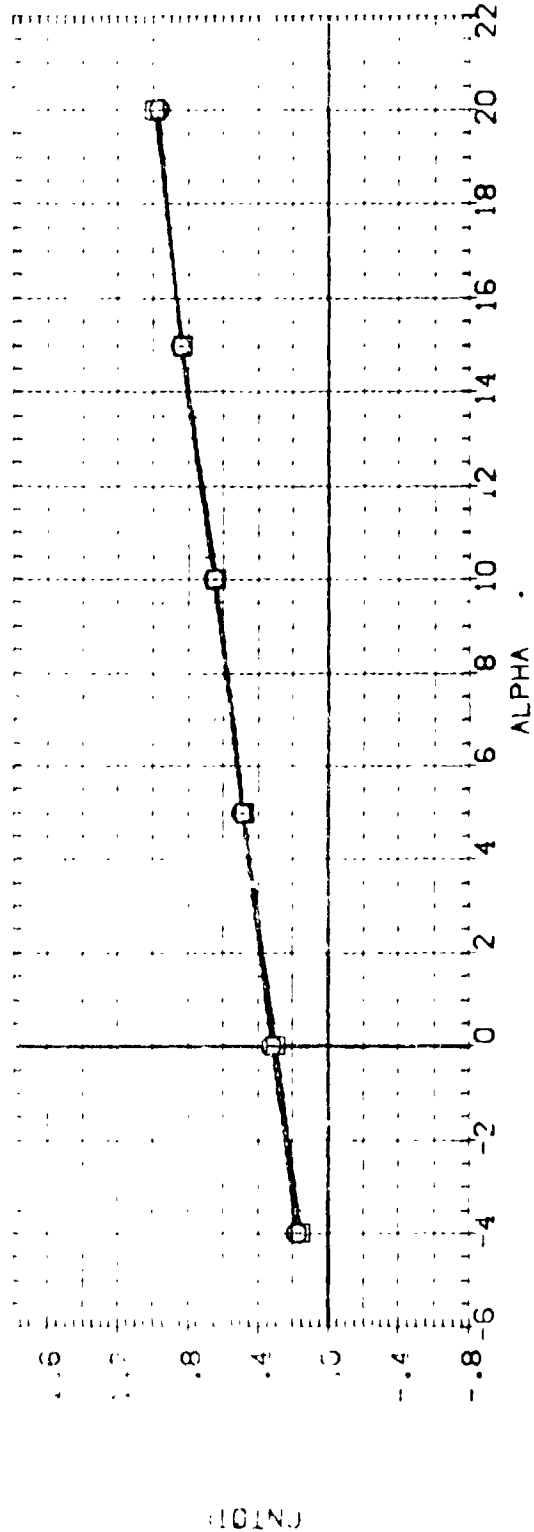
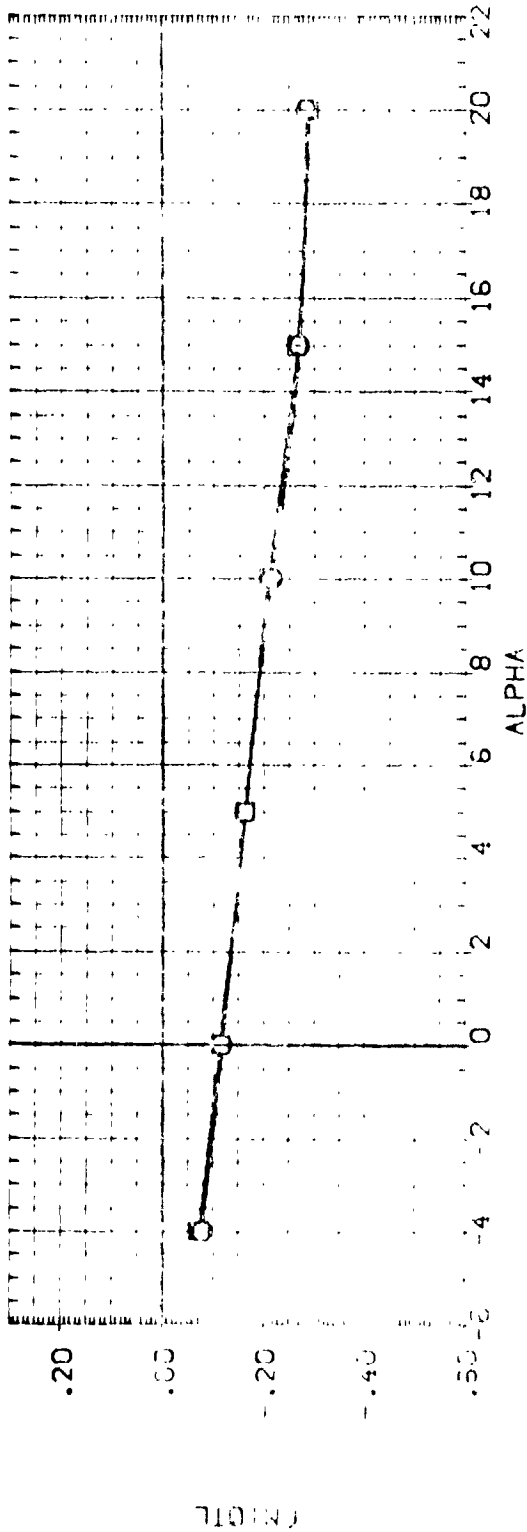


FIG. 31 INTEGRATED FORCE COEFFICIENTS WITH J41, 15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

DATA SET SYMBOL CONFIGURATION DESCRIPTION J42 V87 E18 ELEVON HVB PTN/P BOFLAP REFERENCE INFORMATION

| | | | | | | | | | | | | |
|----------|---|------------------|-----------|-----|---------|------|------|-------|---------|-------|---------|-------|
| (H0V064) | Q | QAS78 (NAAL 713) | 816 CS F1 | J42 | V87 E18 | .000 | .038 | 1.000 | -18.000 | SREF | 4.4120 | 52.00 |
| (H0V063) | Q | QAS78 (NAAL 713) | 816 CS F1 | J42 | V87 E18 | .000 | .038 | 1.300 | -18.000 | LREF | 19.2300 | IN. |
| (Y0V062) | Q | QAS78 (NAAL 713) | 816 CS F1 | J42 | V87 E18 | .000 | .038 | 1.500 | -18.000 | BREF | 37.9350 | IN. |
| | | | | | | | | | | XREF | 43.5980 | IN. |
| | | | | | | | | | | YREF | .0000 | IN. |
| | | | | | | | | | | ZREF | -4.0500 | IN. |
| | | | | | | | | | | SCALE | .0405 | |

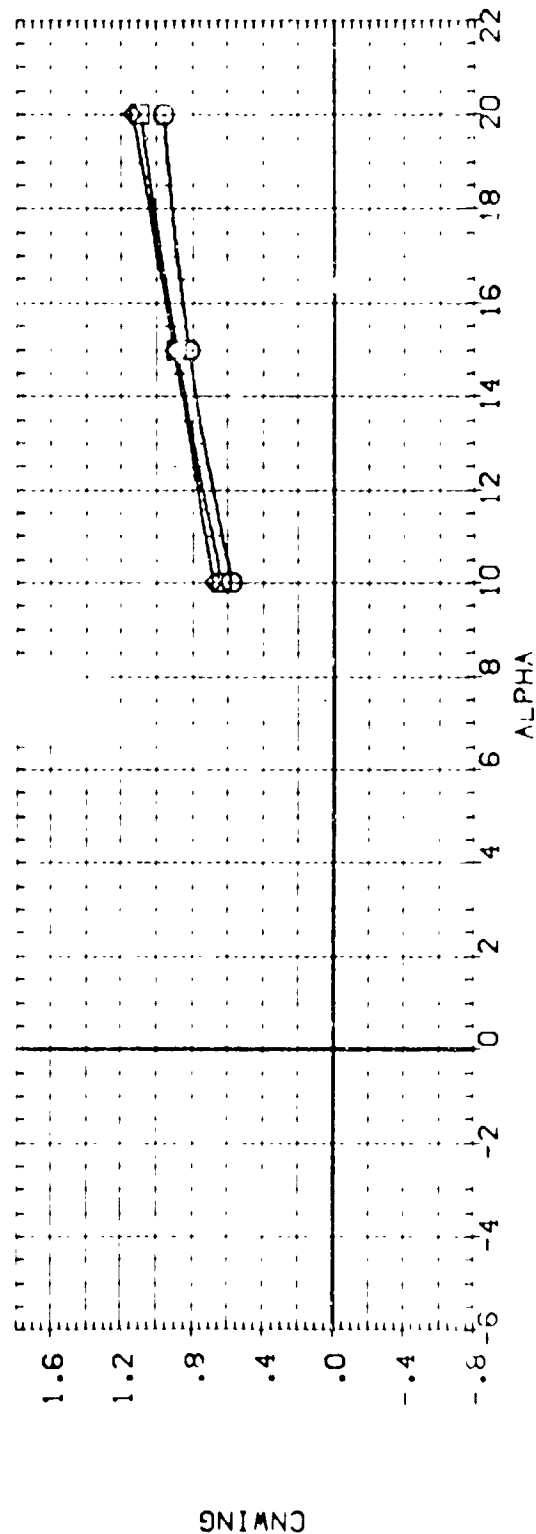
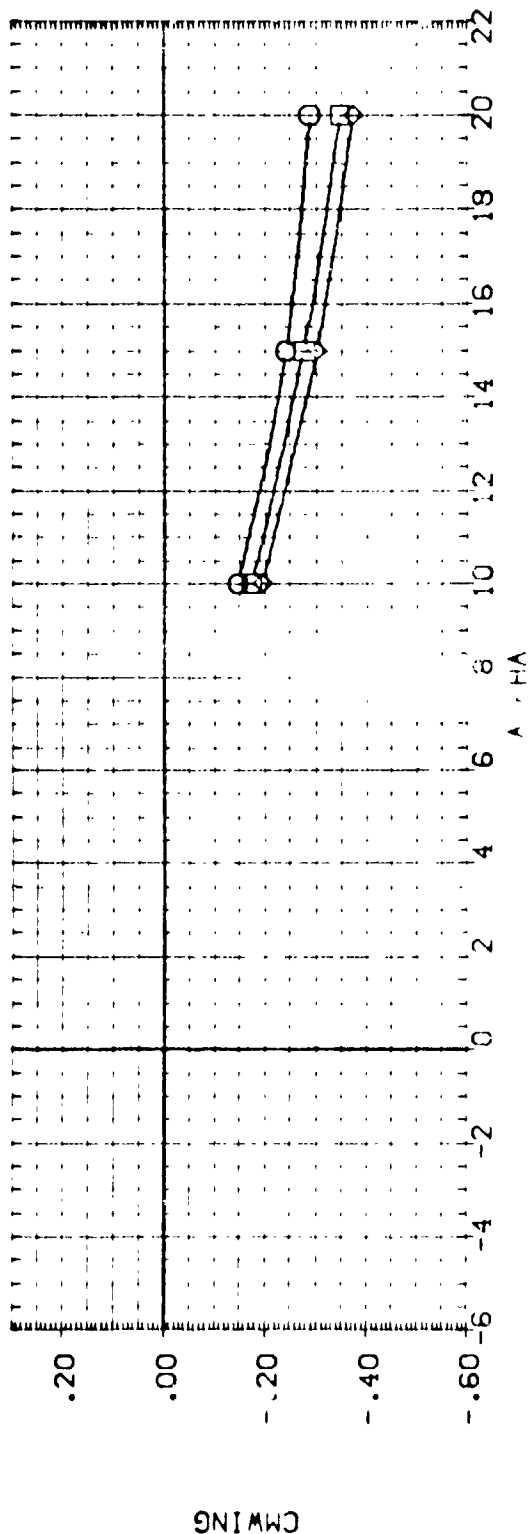


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42, 0 ELEVON, 0 BOFLAP

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | HVB | PTMAP | BUFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| [-C-064] | 3-578 (NAL 713) 8.6 CS F1 | .000 | .038 | 1.000 | -18.000 | SREF 4.470 |
| [-C-063] | 3-579 (NAL 713) 8.6 CS F1 | .000 | .038 | 1.300 | -18.000 | UREF 19.230 |
| [-C-062] | 3-578 (NAL 713) 3.6 CS F1 | .000 | .038 | 1.500 | -18.000 | UREF 37.570 |
| | | | | | | YREF 43.570 |
| | | | | | | YREF .000 |
| | | | | | | ZREF -12.30 |
| | | | | | | SCALE .0405 |

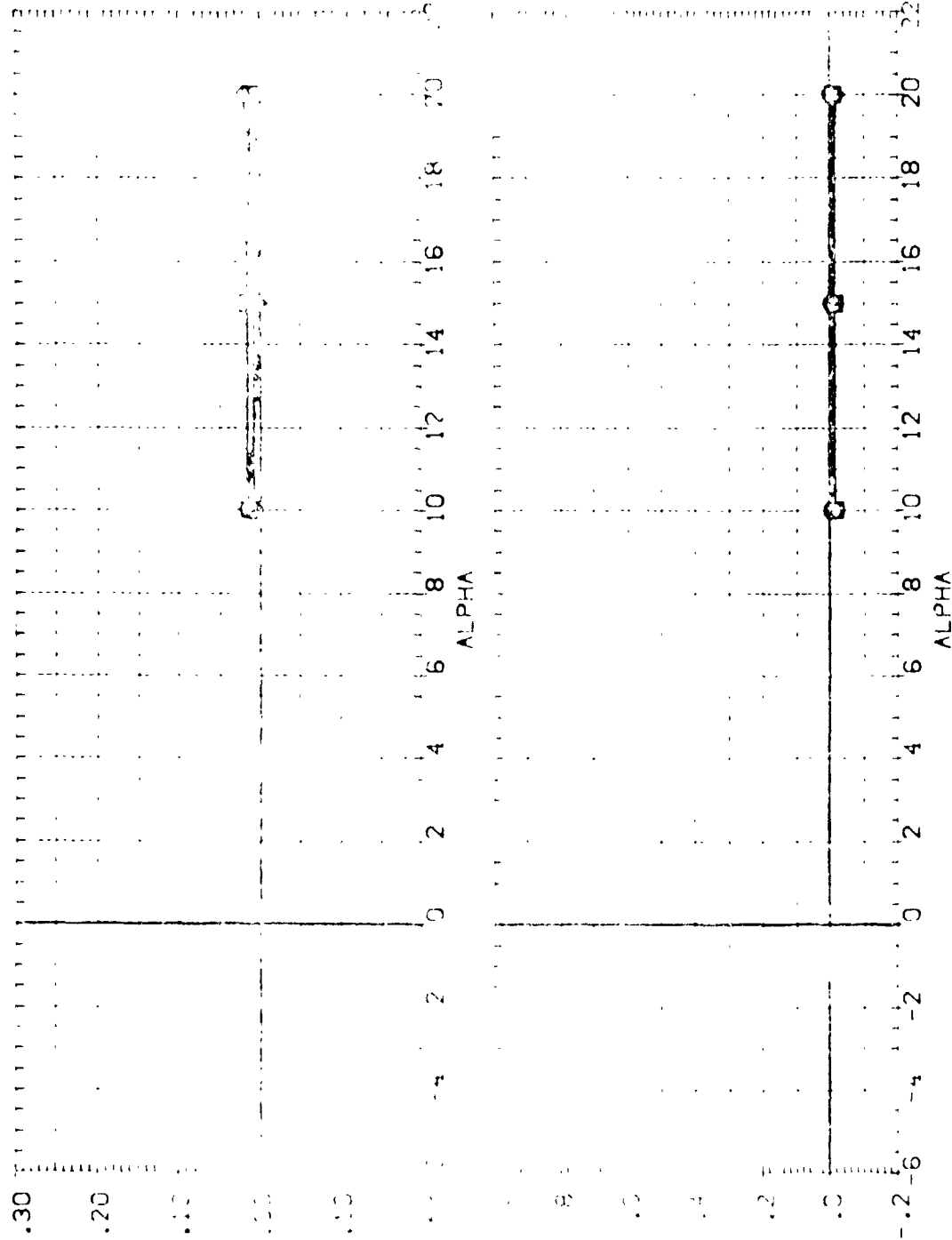


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BUFLAP



| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | HVB | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| (H0064) | Q57B (NAL 7:3) 8:6 CS F | .000 | .000 | 1.000 | -18.000 | SREF 4.4120 SO.FT. |
| (H0063) | Q57B (NAL 7:3) 8:6 CS F | .000 | .000 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (H0062) | Q57B (NAL 7:3) 8:6 CS F | .000 | .000 | 1.500 | -18.000 | BREF 37.9000 IN. |
| | | | | | | XTRP 43.5000 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

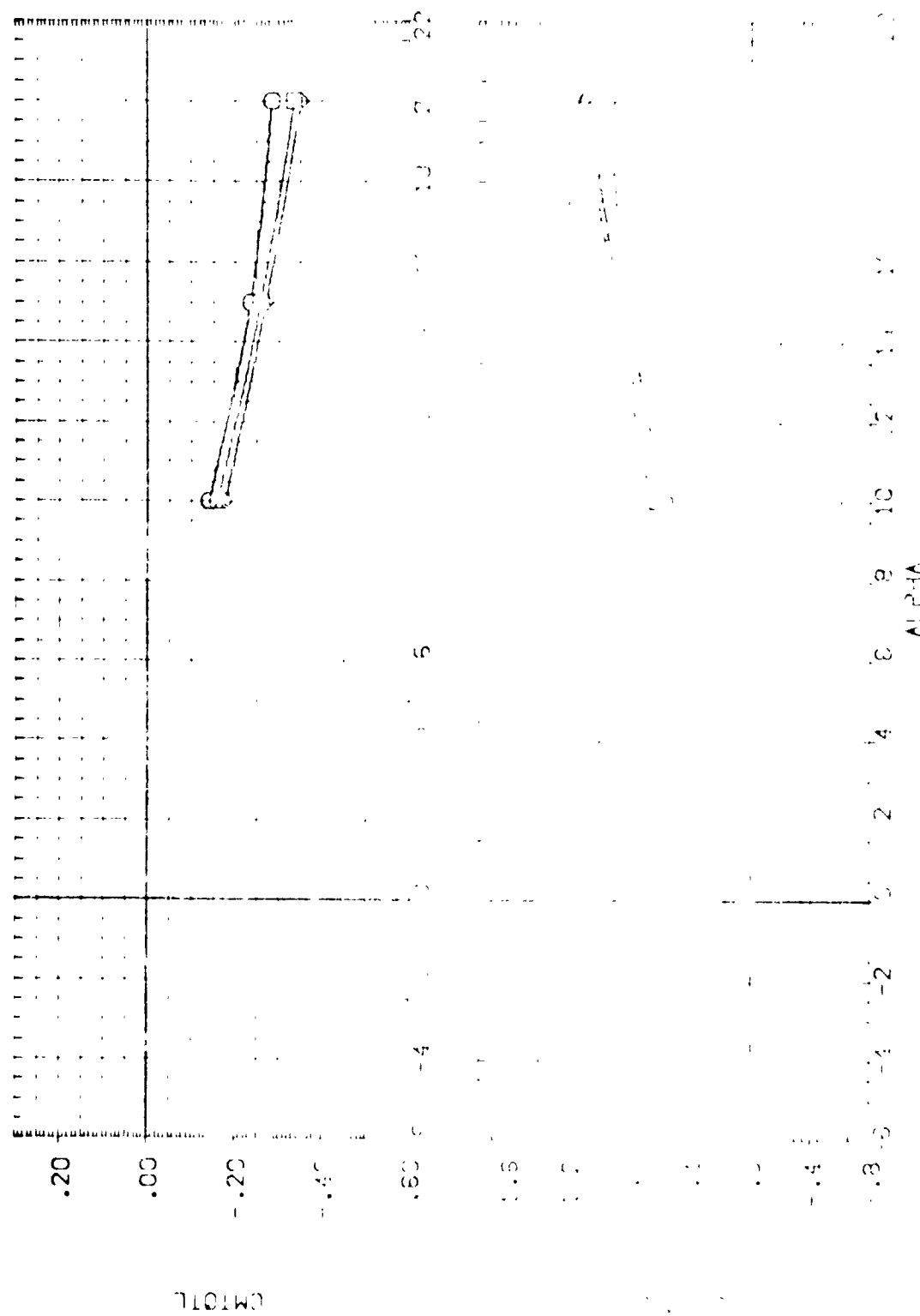


FIG. 37 INTEGRATED FORCE COEFFICIENTS AT $\alpha = 0^\circ$

| DATA SET SYMBOL | CONF | DURATION DESCRIPTION | ELEVON | W/B | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|------|------------------------------|--------|------|-------|---------|-----------------------|
| (F0406) | C | QAS7B (NVAL 7 [3]) B16 CS F1 | .000 | .125 | 1.000 | -18.000 | SREF 4.4 20 SQ.FT. |
| (F0406) | C | QAS7B (NVAL 7 [3]) B16 CS F1 | .000 | .125 | .300 | -18.000 | LREF 19.2 10 |
| (F0406) | C | QAS7B (NVAL 7 [3]) B16 CS F1 | .000 | .125 | .500 | -18.000 | BREF 37.6 10 |
| | | | | | | | XREF 43.0 10 |
| | | | | | | | YREF 10.0 10 |
| | | | | | | | ZREF -10.0 10 |
| | | | | | | | SCALE .0405 |

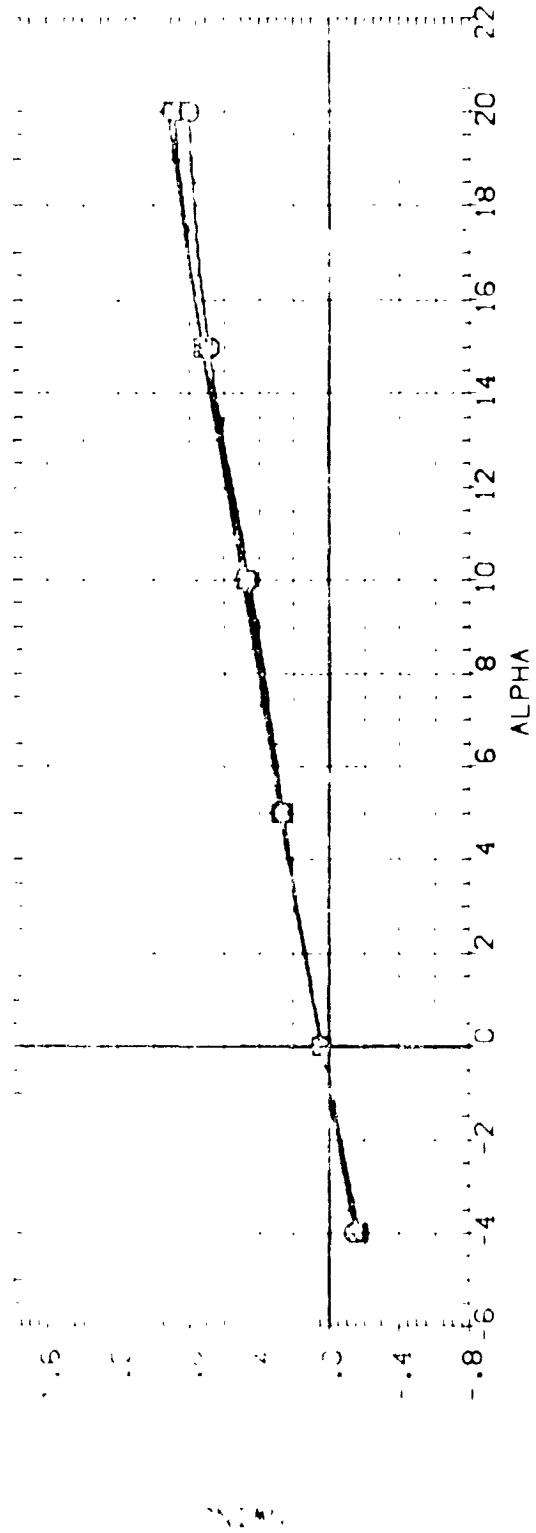
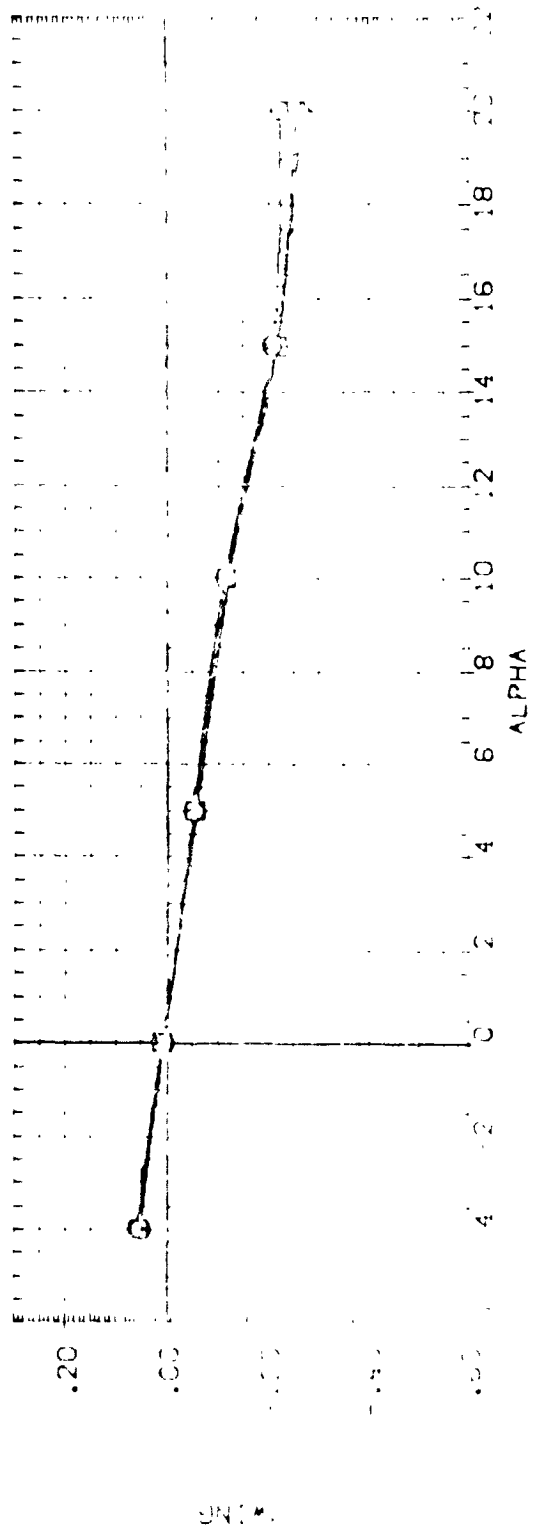


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BDFLAP
 CASMAC = .420 PAGE 152



| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | HVB | PTNVP | BUFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (F0:05) | 0A578 (NVAL 7) (3) 816 CS F1 J42 V87 E18 | .000 | .125 | 1.000 | -18.000 | SREF 4.4120 50 FT. |
| (F0:06) | 0A578 (NVAL 7) (3) 816 CS F1 J42 V87 E18 | .000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (F0:08) | 0A578 (NVAL 7) (3) 816 CS F1 J42 V87 E18 | .000 | .125 | 1.500 | -18.000 | BREF 37.9300 IN. |
| | | | | | | XREF 43.5000 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -1.0500 IN. |
| | | | | | | SCALE .0105 |

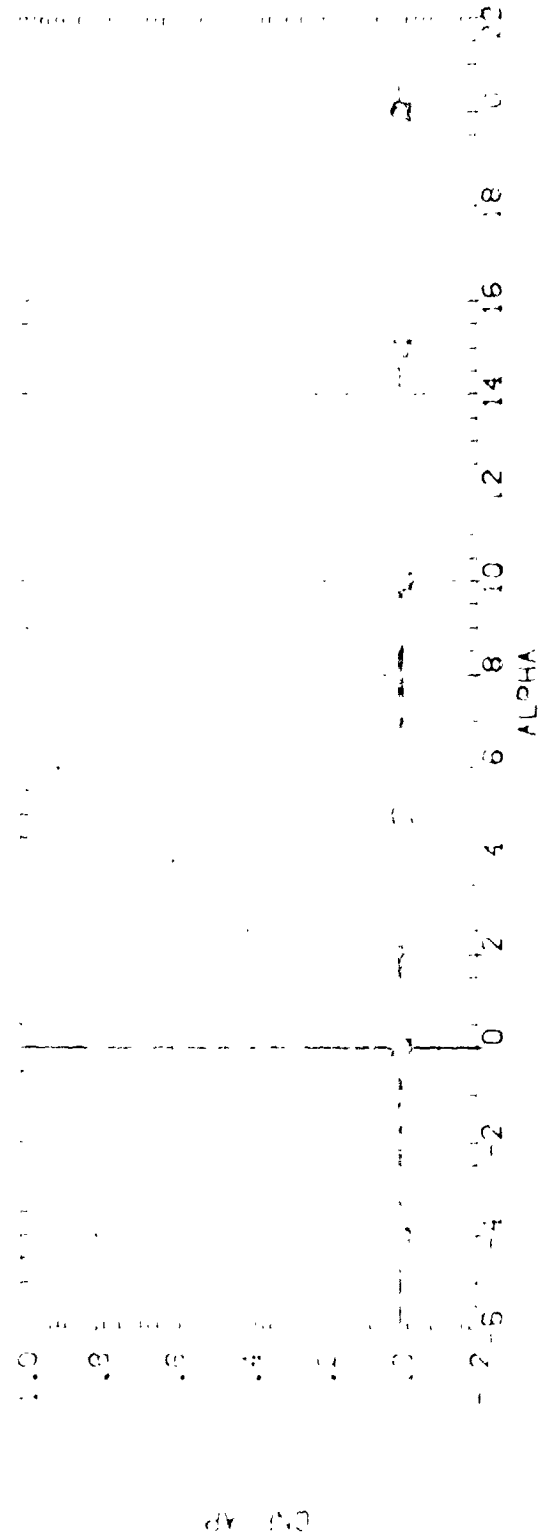
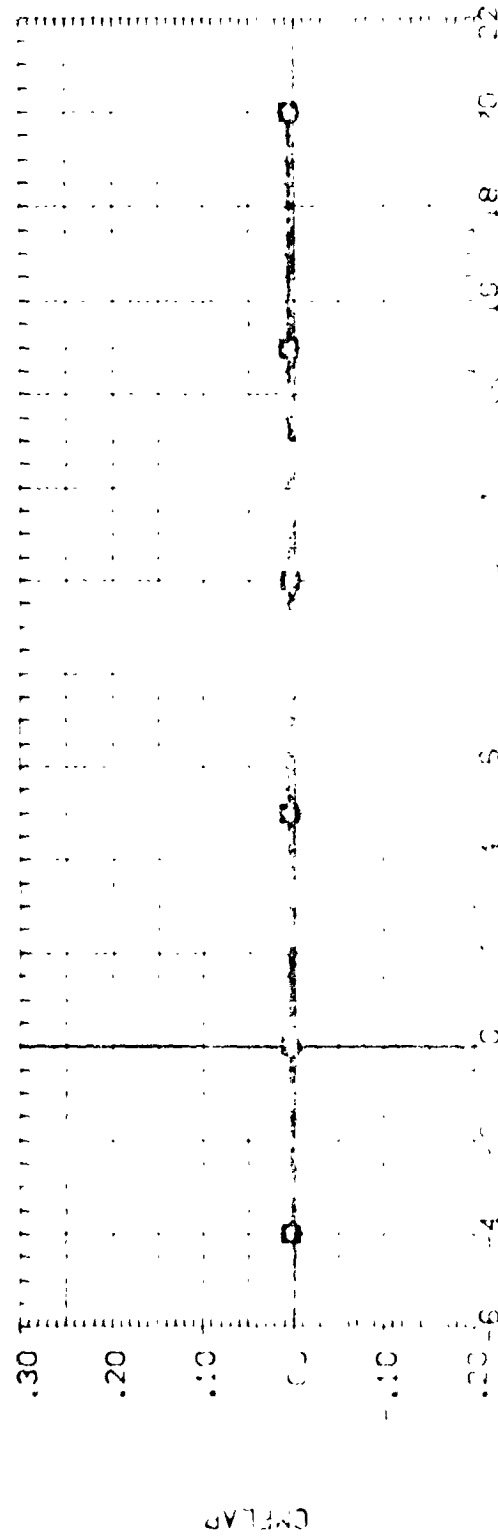


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42, 0 ELEVON AND -1.9 BUFLAP
 (ADWACH - .20) PAGE 153

DATA SET SYMBOL: (FDV061) (FDV060) (FDV059)

CONFIGURATION DESCRIPTION: QAS7B (NAAL 713) B16 CS E1 QAS7B (NAAL 713) B16 CS E1 QAS7B (NAAL 713) B16 CS E1

ELEVON HVB PTNP BDFLAP REFERENCE INFORMATION: .000 .125 .000 -18.000 SREF 4.4100 S2.FY 19.2000 LREF 37.6000 YREF 43.5000 XREF 0.0000 YREF 0.0000 ZREF -40.5000 SCALE .0405

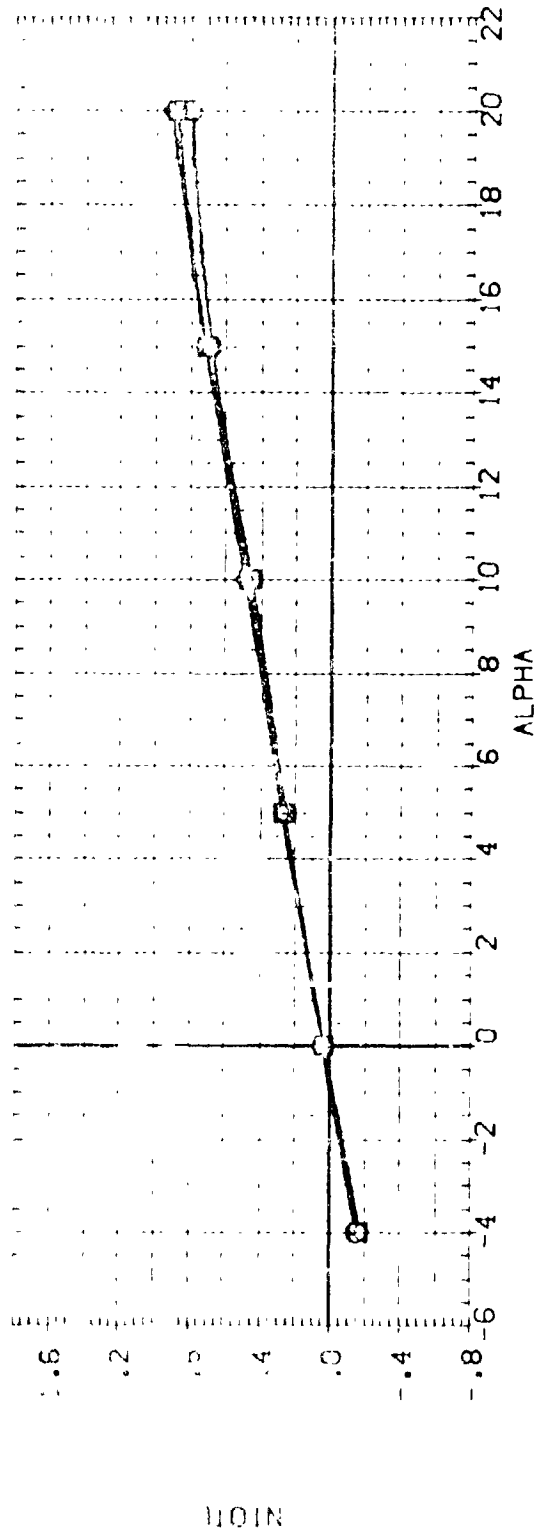
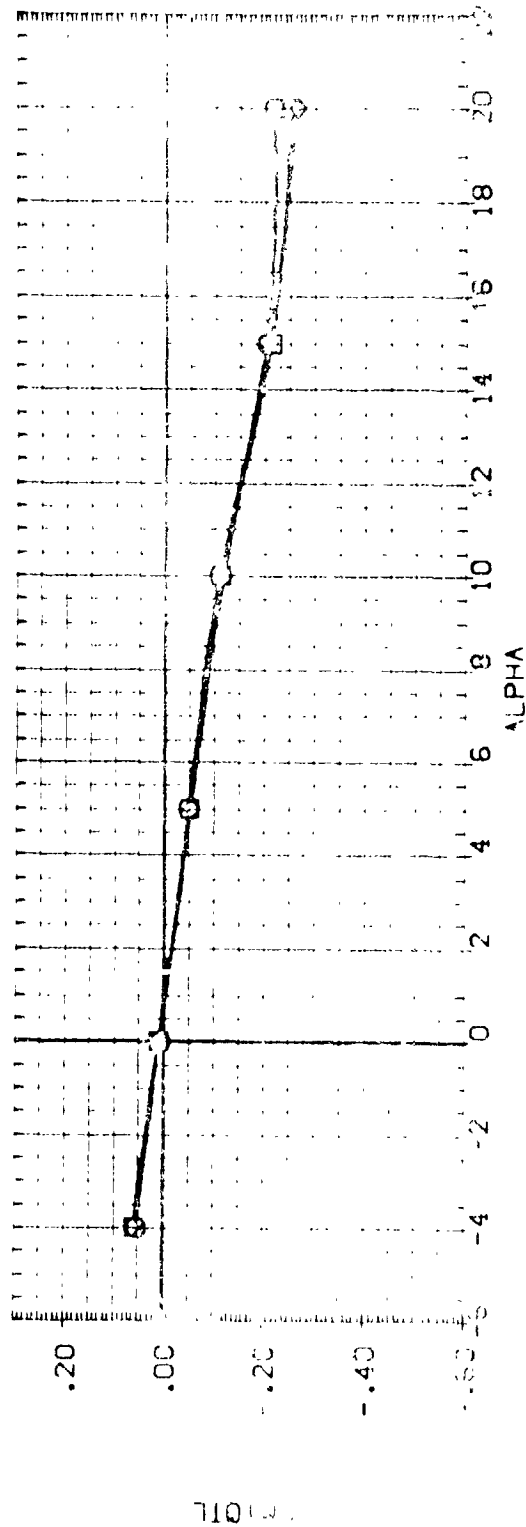


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BDFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (FDV070) | DA578 (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .286 | 1.000 | -18.000 | SREF 4.4120 50.171 |
| (FDV069) | DA578 (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .286 | 1.300 | -18.000 | LREF 19.2300 17.1 |
| (FDV068) | DA578 (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .286 | 1.500 | -18.000 | BREF 37.9350 17.1 |
| | | | | | | XREF 43.5530 17.1 |
| | | | | | | YREF .0000 17.1 |
| | | | | | | ZREF -.4050 17.1 |
| | | | | | | SCALE .0405 |

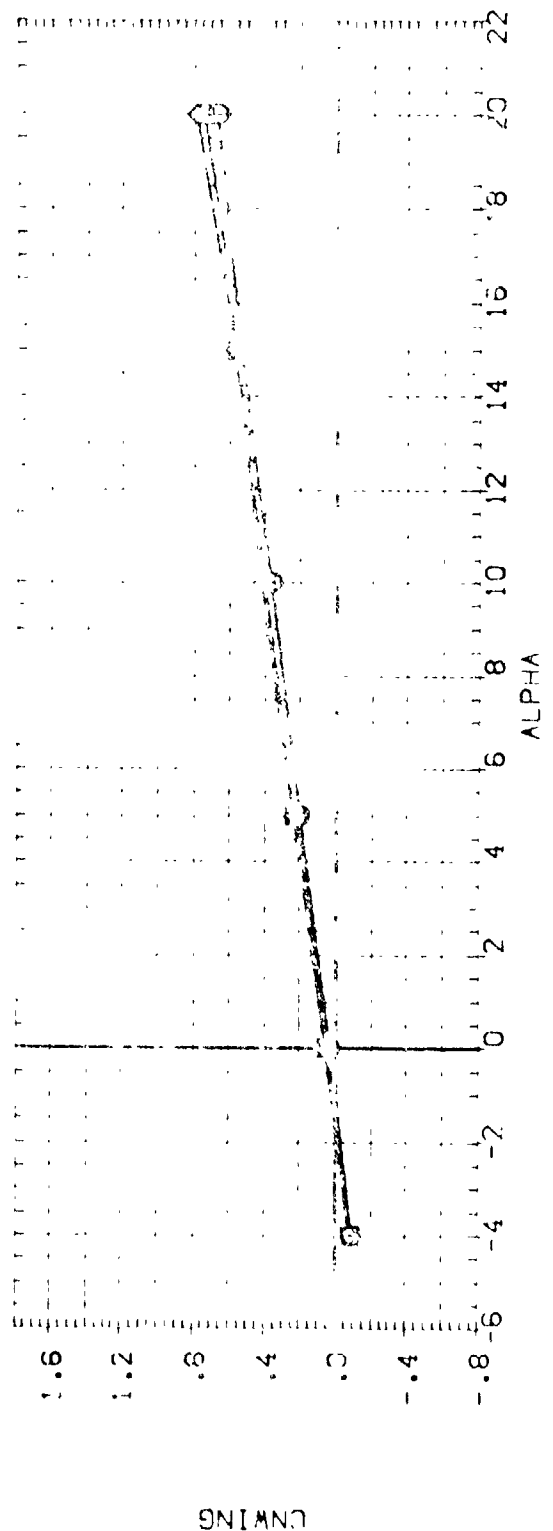
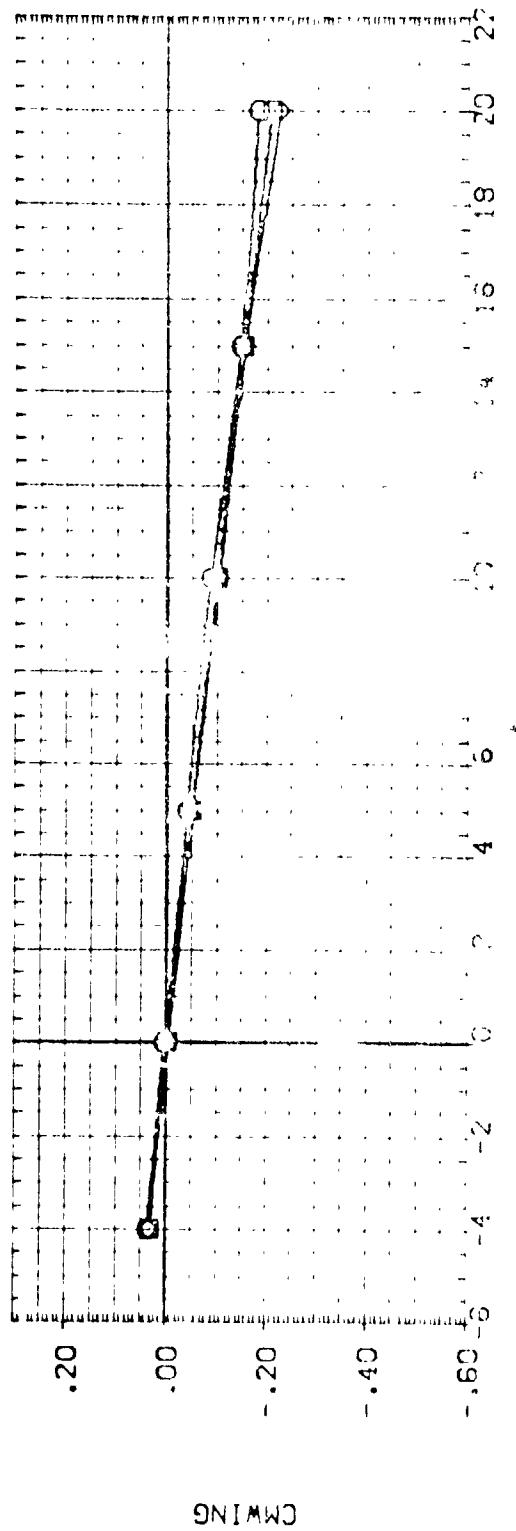


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42 . 0 ELEVON AND -18 30FLAP
 (A)MACH = .20

| | | | | | | | |
|-----------------|------|----------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONF | DESCRIPTION | ELEVON | W/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (E070) | Q | 0A578 (NAAL 713) B16 CS F1 | .000 | .266 | 1.000 | -18.000 | SREF 4.4'00 52.0'00 |
| (E070) | Q | 0A578 (NAAL 713) B16 CS F1 | .000 | .266 | 1.300 | -18.000 | SREF 19.2'00 52.0'00 |
| (E070) | Q | 0A578 (NAAL 713) B16 CS F1 | .000 | .266 | 1.500 | -18.000 | SREF 30.2'00 52.0'00 |
| | | | | | | | XREF 43.2'00 52.0'00 |
| | | | | | | | YREF 0.000 52.0'00 |
| | | | | | | | ZREF -1.000 52.0'00 |
| | | | | | | | SCALE .0405 |

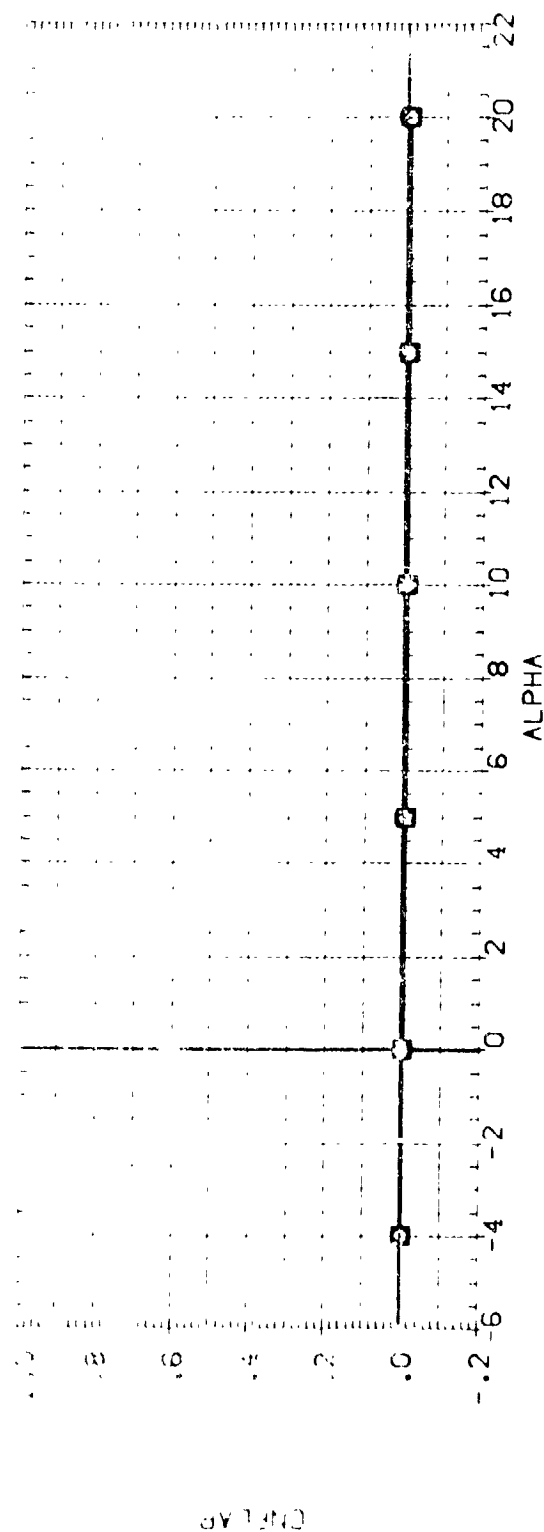
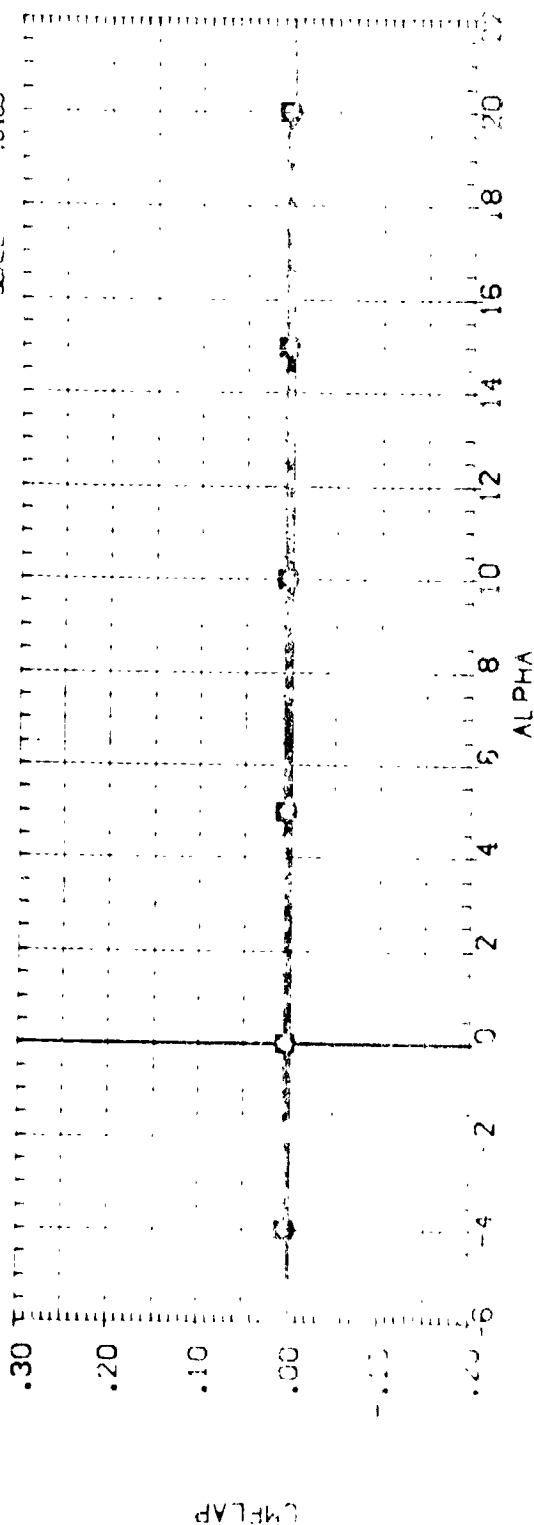


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42 . 0 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J42 | V87 E18 | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|-----------|--------|------|-------|---------|-----------------------|
| (FDV070) | QAS78 (NAAL 713) | B16 CS F1 | B16 CS F1 | .000 | .286 | 1.000 | -18.000 | SREF 4.4120 50.FT. |
| (FDV069) | QAS78 (NAAL 713) | B16 CS F1 | B16 CS F1 | .000 | .286 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDV068) | QAS78 (NAAL 713) | B16 CS F1 | B16 CS F1 | .000 | .286 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | | | XREF 43.5030 IN. |
| | | | | | | | | YREF .0000 IN. |
| | | | | | | | | ZREF -.4050 IN. |
| | | | | | | | | SCALE .0405 |

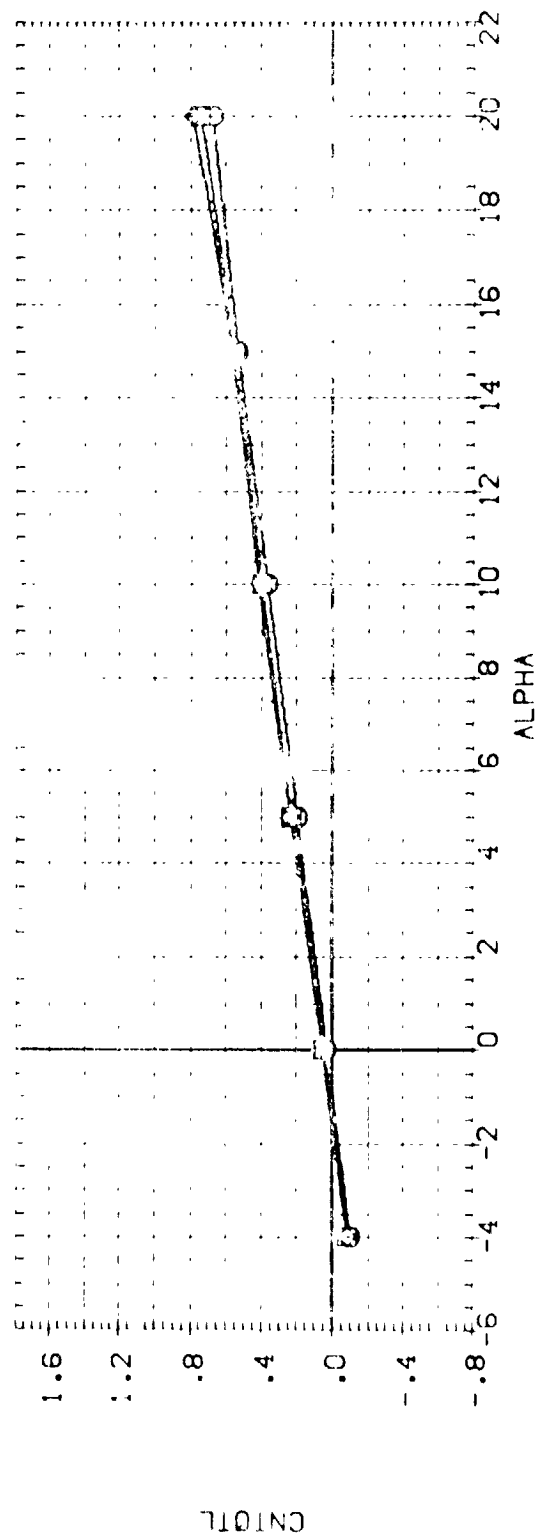
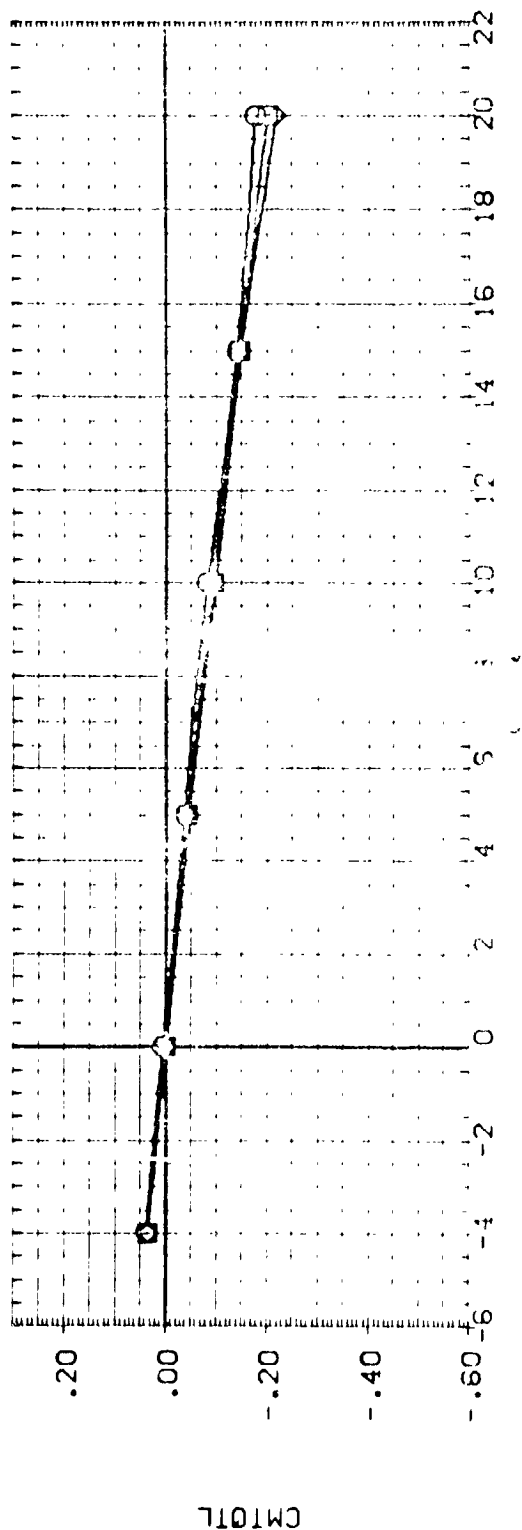


FIG. 32 INTEGRATED FORCE COEFFICIENTS WITH J42, 0 ELEVON AND -18 BOFLAP
 (ADMACH = .00) PAGE 157

DATA SET SYMBOL CONFIGURATION DESCRIPTION

| DATA SET SYMBOL | CONFIGURATION | DESCRIPTION | J40 | V87 E18 | ELEVON | HVB | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|-----------------|-------------|-----|---------|---------|------|-------|---------|-----------------------|
| (-C-042) | 245/B (NAL 713) | 816 CS FI | J40 | V87 E18 | -15.000 | .038 | 1.000 | -18.000 | SREF 4.4120 57.17 |
| (-C-041) | 245/B (NAL 713) | 816 CS FI | J40 | V87 E18 | -15.000 | .038 | 1.300 | -18.000 | LREF 19.2300 14.1 |
| (-C-040) | 245/B (NAL 713) | 816 CS FI | J40 | V87 E18 | -15.000 | .038 | 1.500 | -18.000 | BREF 37.8350 14.1 |
| | | | | | | | | | XREF 43.5550 14.1 |
| | | | | | | | | | YREF .0000 14.1 |
| | | | | | | | | | ZREF -.4050 14.1 |
| | | | | | | | | | SCALE .0405 |

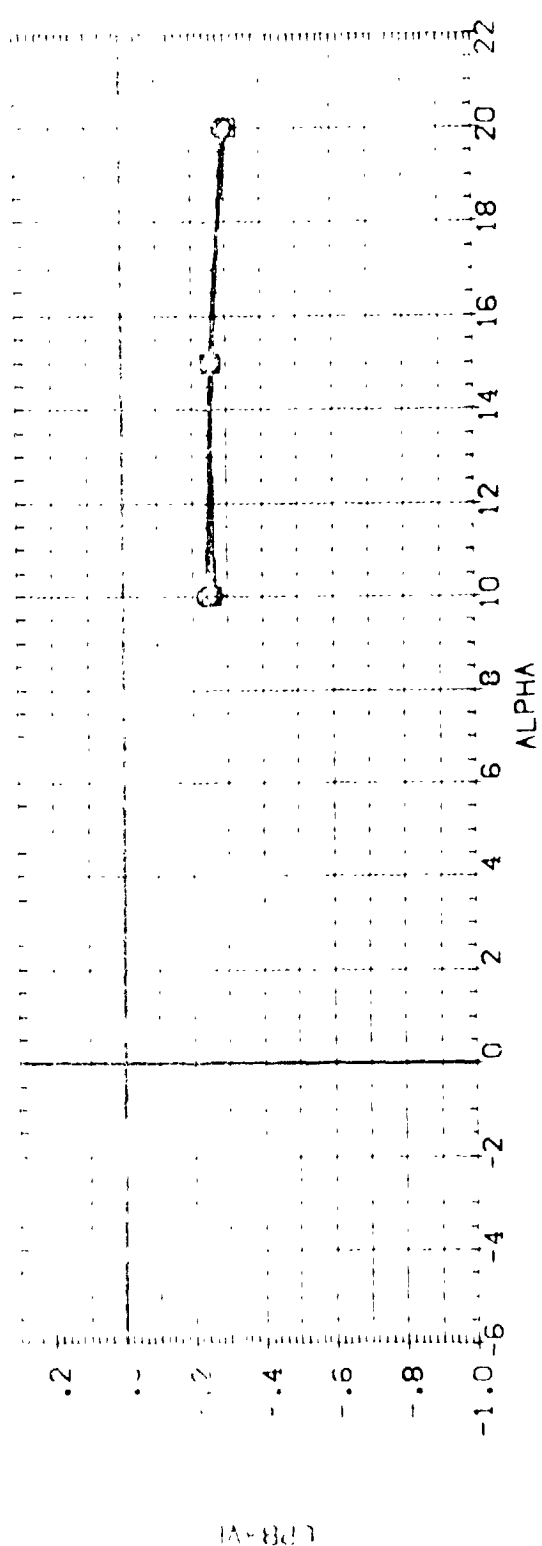
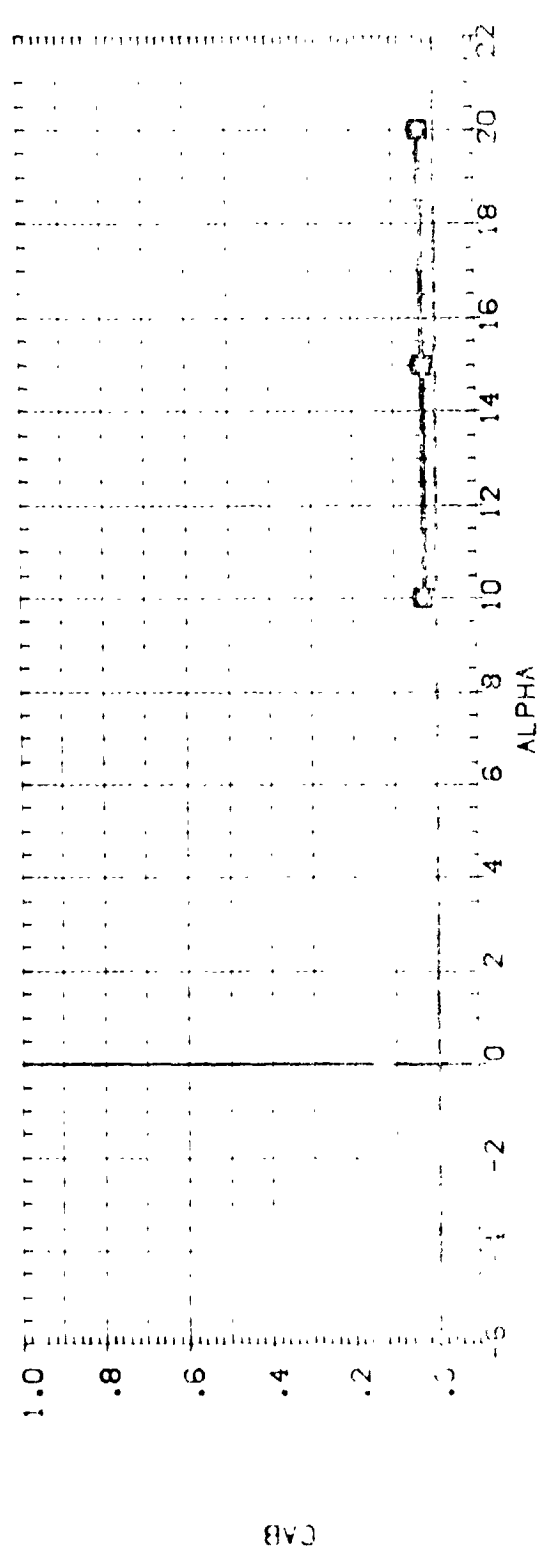


FIG. 33 BASE PRESSURE AND AXIAL FORCE WITH J40, -15 ELEVEN AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | HVB | PTMP | BDFLAP | REFERENCE INFORMATION |
|-----------------|--|---------|------|-------|---------|-----------------------|
| (FDV045) | 0A578 (NAAL 713) 816 CS F1 J40 V87 E18 | -15.000 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV044) | 0A578 (NAAL 713) 816 CS F1 J40 V87 E18 | -15.000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDV043) | 0A578 (NAAL 713) 816 CS F1 J40 V87 E18 | -15.000 | .125 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XTRP 43.5530 IN. |
| | | | | | | YTRP .0000 IN. |
| | | | | | | ZTRP -.4050 IN. |
| | | | | | | SCALE .0405 |

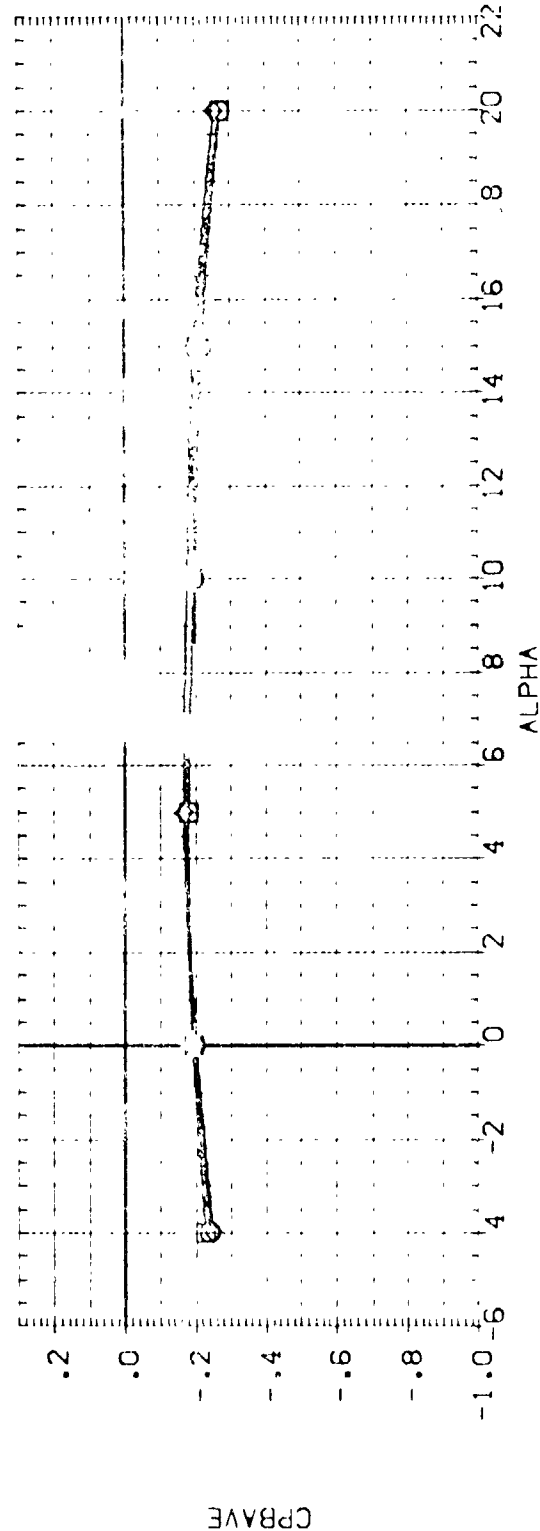
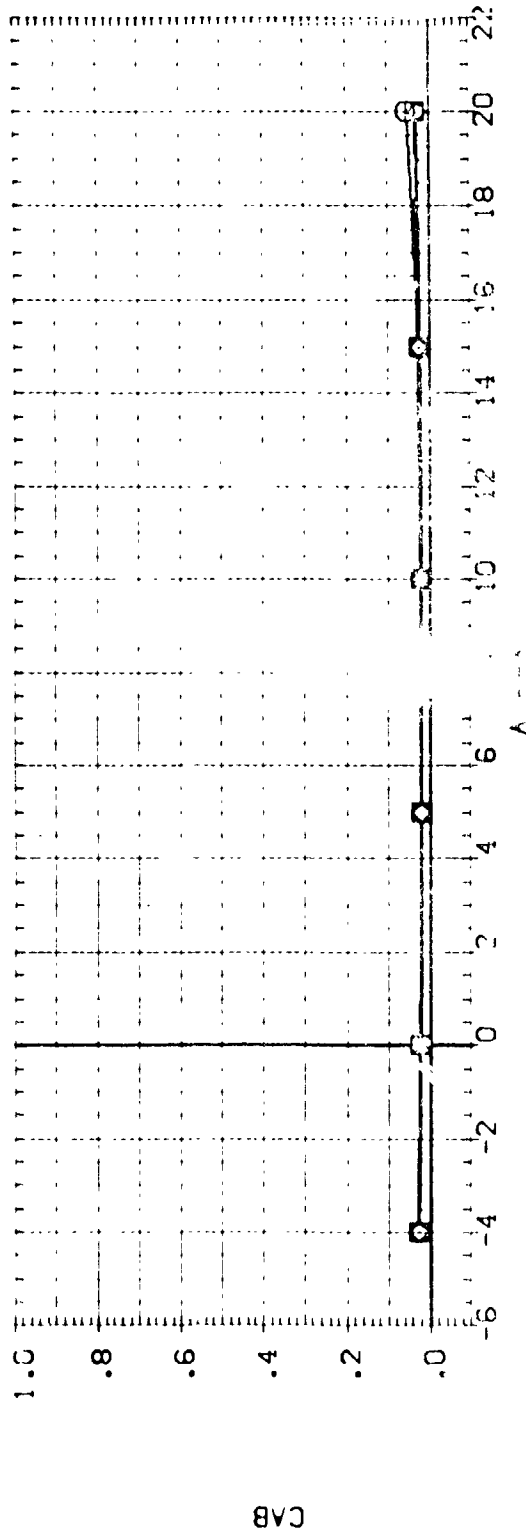


FIG. 33 BASE PRESSURE AND AXIAL FORCE WITH J40, -15 ELEVON AND 18 BDFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | HVB | PTN/P | BOFLAP | REFERENCE INFORMATION ON |
|-----------------|----------------------------|-----|---------|---------|------|-------|---------|--------------------------|
| (J40V038) | QAS78 (NAAL 713) 816 03 F1 | J40 | V87 E18 | -15.000 | .286 | 1.000 | -18.000 | SREF 4.120 52.17 |
| (J40V038) | QAS78 (NAAL 713) 816 03 F1 | J40 | V87 E18 | -15.000 | .286 | 1.300 | -18.000 | LREF 19.230 14 |
| (J40V037) | QAS78 (NAAL 713) 816 03 F1 | J40 | V87 E18 | -15.000 | .286 | 1.500 | -18.000 | BREF 37.924 14 |
| | | | | | | | | XREF 43.530 14 |
| | | | | | | | | YREF .0000 14 |
| | | | | | | | | ZREF -.4050 14 |
| | | | | | | | | SCALE .0405 |

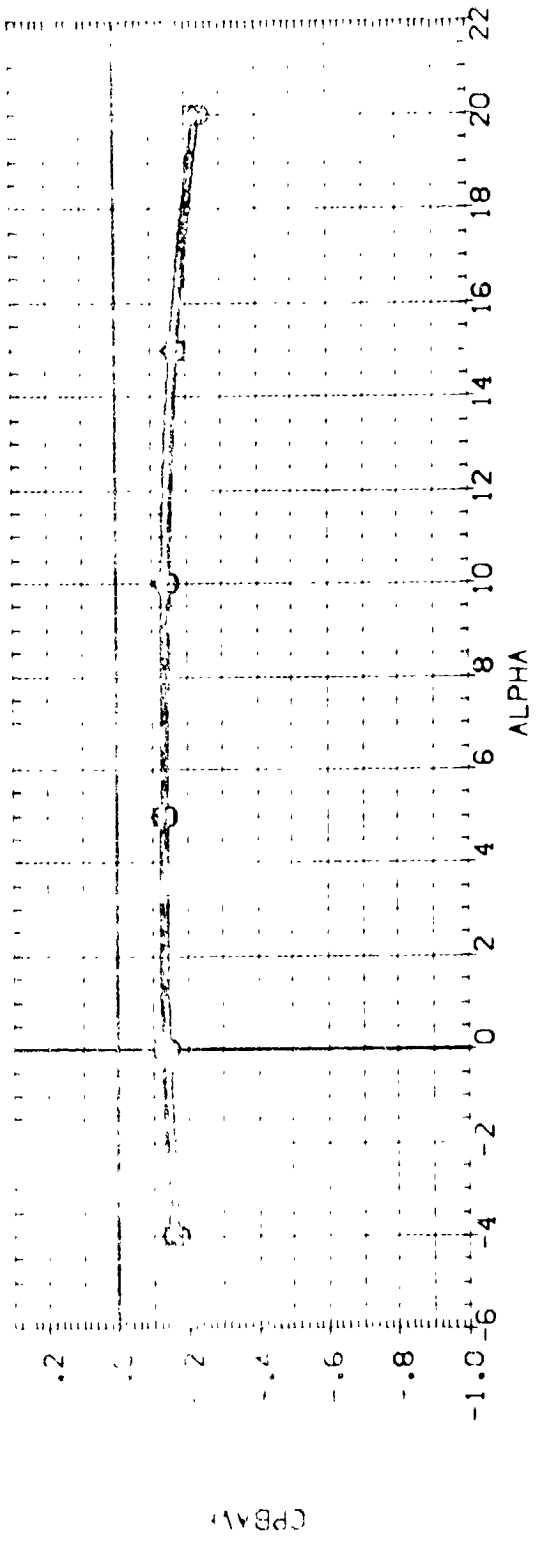
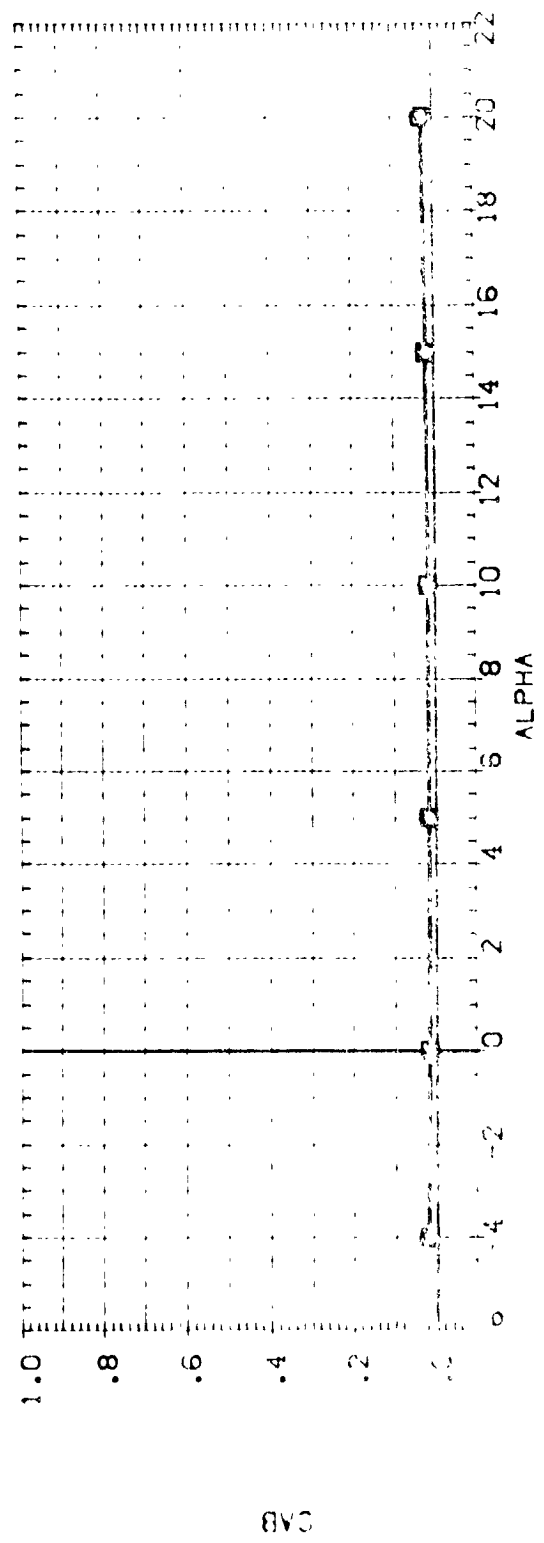


FIG. 33 BASE PRESSURE AND AXIAL FORCE WITH J40 , -15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/R | PTV/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (H0V003) | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .039 | 1.000 | -19.000 | SREF 4.4173 50.F |
| (H0V004) | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .039 | 1.300 | -18.000 | LREF 19.2 IN. |
| (H0V005) | QAS78 (NAAL 713) 816 CS F1 J40 V87 E18 | .000 | .039 | 1.500 | -18.000 | BREF 37.953 IN. |
| | | | | | | YREF 43.593 IN. |
| | | | | | | ZREF -.0000 IN. |
| | | | | | | SCALE .0405 |

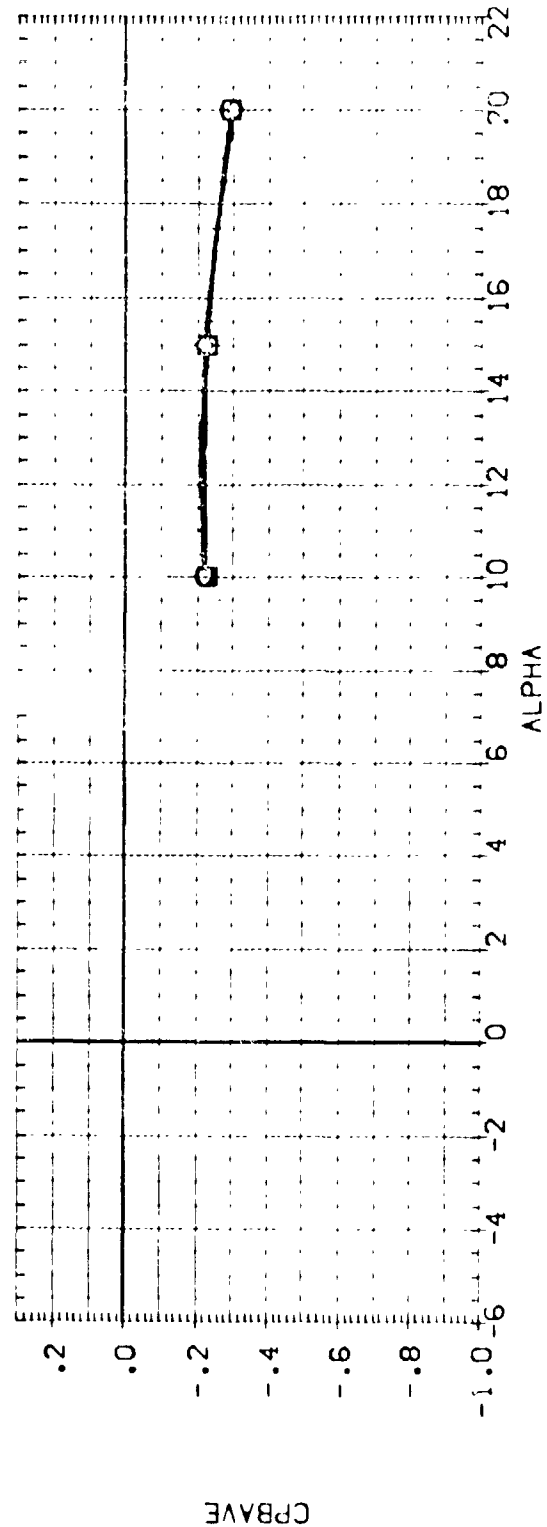
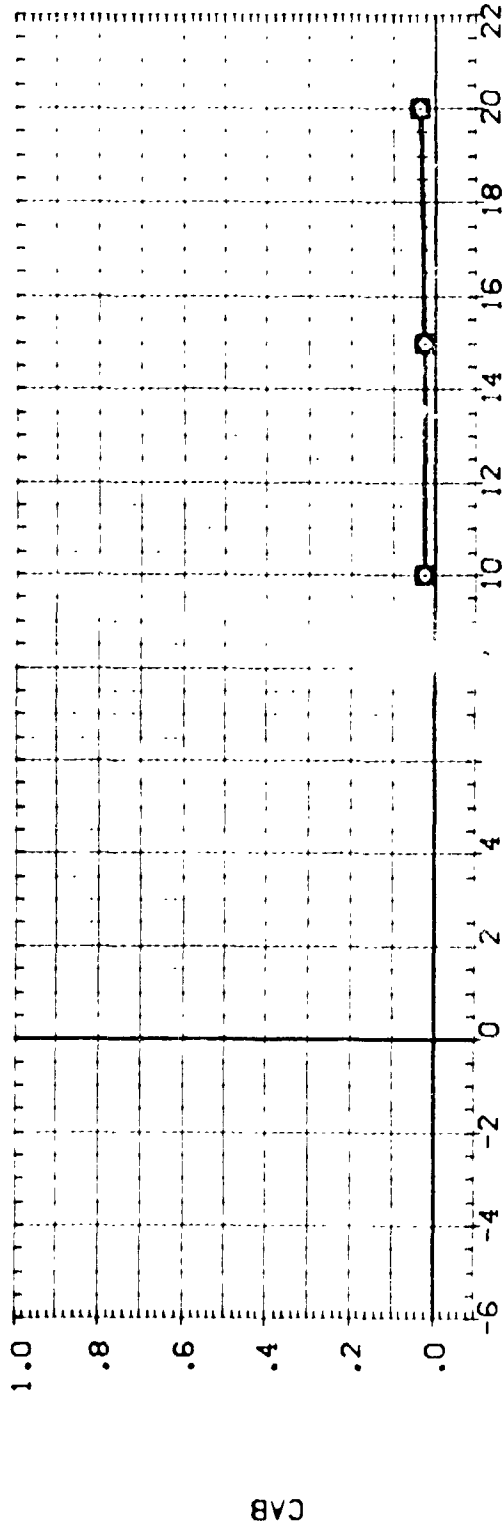


FIG. 34 BASE PRESSURE AND AXIAL FORCE WITH J40, 0 ELEVON AND -18 BOFLAP
 (A)MACH = .20 PAGE 161

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | H/V8 | PTNVP | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|-----------|--------|------|-------|---------|-----------------------|
| (EDVO15) | QAS7B (NAL 713) | 816 CS F1 | 816 CS F1 | .000 | .266 | 1.000 | -18.000 | SREF 4.4120 SC.FT. |
| (EDVO17) | QAS7B (NAL 713) | 816 CS F1 | 816 CS F1 | .000 | .266 | 1.300 | -18.000 | LREF 19.2300 |
| (EDVO16) | QAS7B (NAL 713) | 816 CS F1 | 816 CS F1 | .000 | .266 | 1.500 | -18.000 | BREF 37.9360 |
| | | | | | | | | XMRP 43.5360 |
| | | | | | | | | YMRP .0000 |
| | | | | | | | | ZMRP -.4050 |
| | | | | | | | | SCALE .0405 |

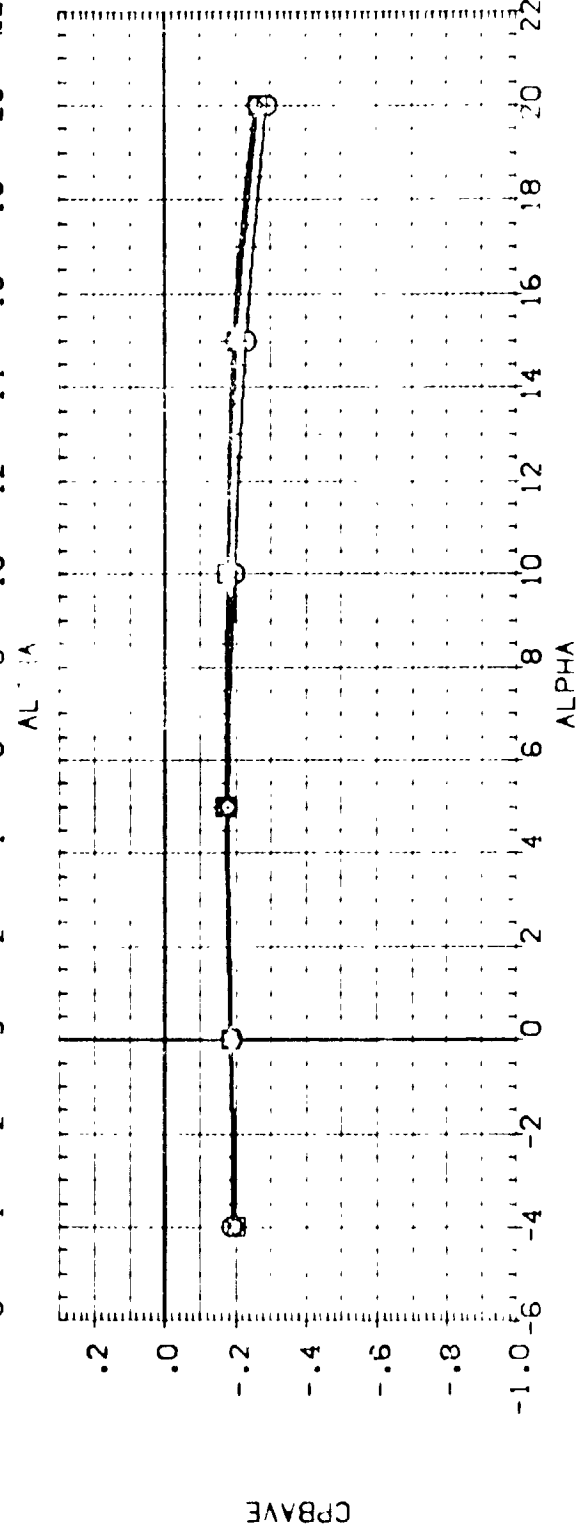
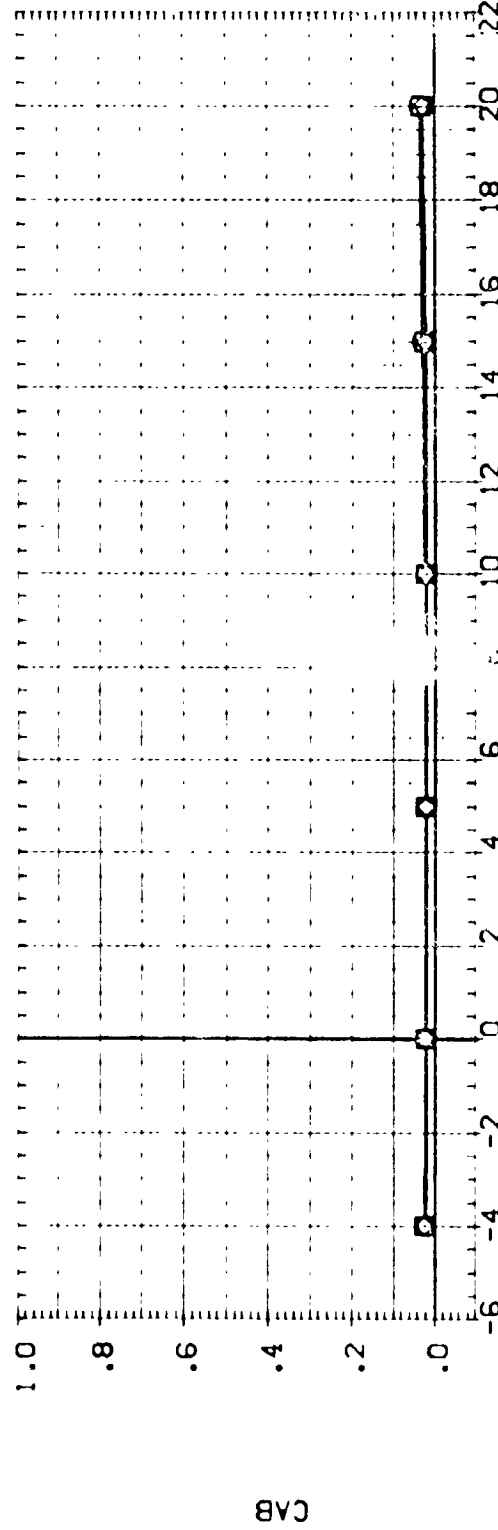


FIG. 34 BASE PRESSURE AND AXIAL FORCE WITH J40 . 0 ELEVON AND -18 BOFLAP
 (ADMACH = 2.0) PAGE 163

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | HVB | YINP | BOFLAP | REFERENCE INFORMATION |
|-----------------|--------------------------------------|--------|------|-------|--------|-----------------------|
| (F0001) | QASB (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .125 | 1.000 | .000 | SREF 4.4120 50.00 |
| (F0002) | QASB (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .125 | 1.300 | .000 | LREF 15.0000 10.00 |
| (F0003) | QASB (NAL 713) B16 CS F1 J40 V87 E18 | .000 | .125 | 1.500 | .000 | GREF 31.0000 10.00 |
| | | | | | | XREF 43.0000 10.00 |
| | | | | | | YREF .0000 10.00 |
| | | | | | | ZREF -4.0000 10.00 |
| | | | | | | SCALE .0405 |

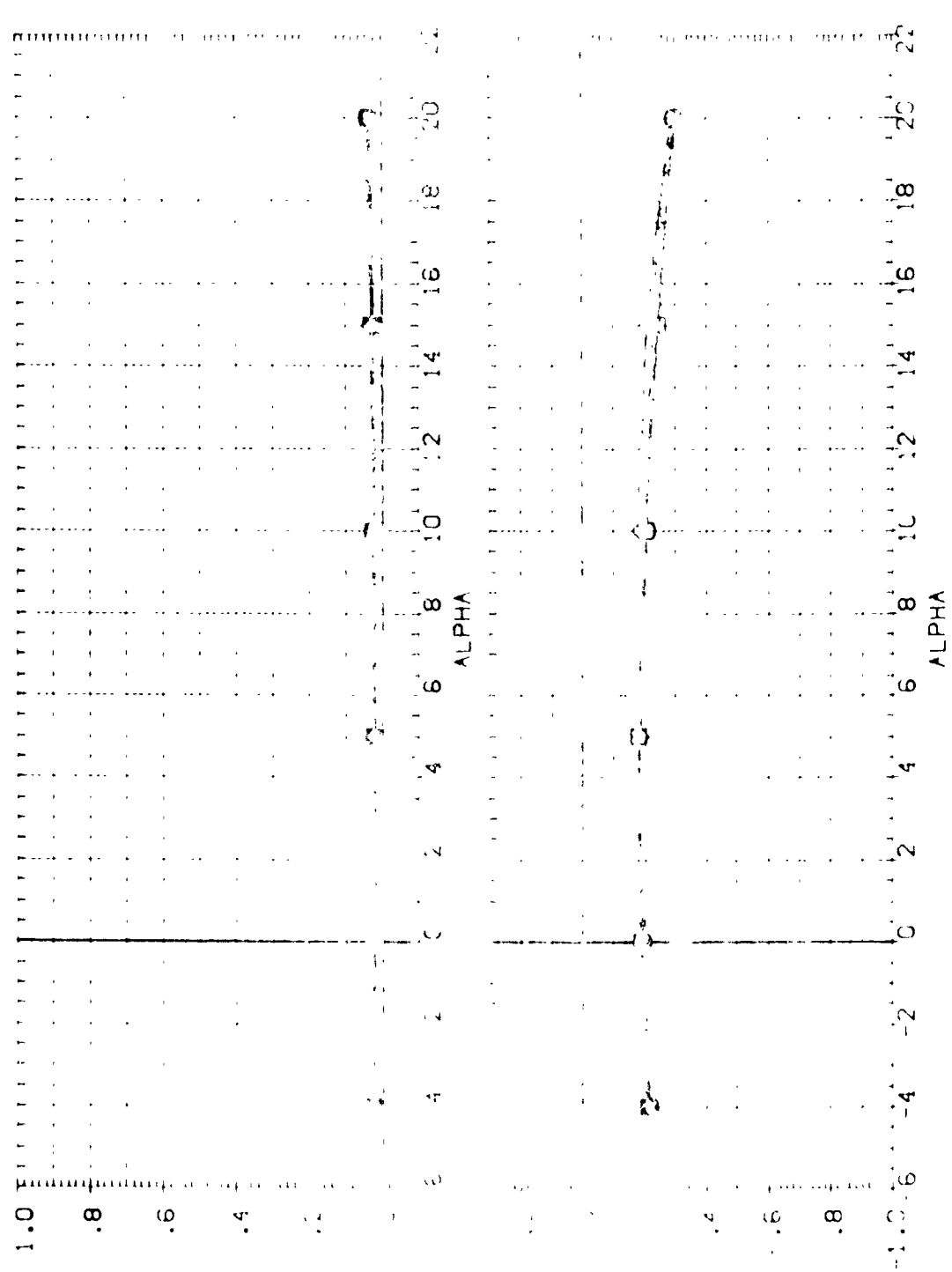


FIG. 35 BASE PRESSURE AND AXIAL FORCE WITH J40, 0 ELEVON AND 0 BOFLAP
 (A)MACH = 0.10 PAGE 164



| ELEVATION | W/B | STN/P | BOFLAP | REFERENCE INFORMATION | SG. FT. |
|-----------|------|-------|--------|-----------------------|---------|
| .000 | .286 | 1.000 | .000 | SREF | 4.120 |
| .000 | .286 | .300 | .000 | LREF | 19.230 |
| .000 | .286 | 1.500 | .000 | BREF | 37.930 |
| .000 | | | | WREF | 43.500 |
| | | | | THRP | .000 |
| | | | | ZHRC | - .400 |
| | | | | SCALE | .0405 |

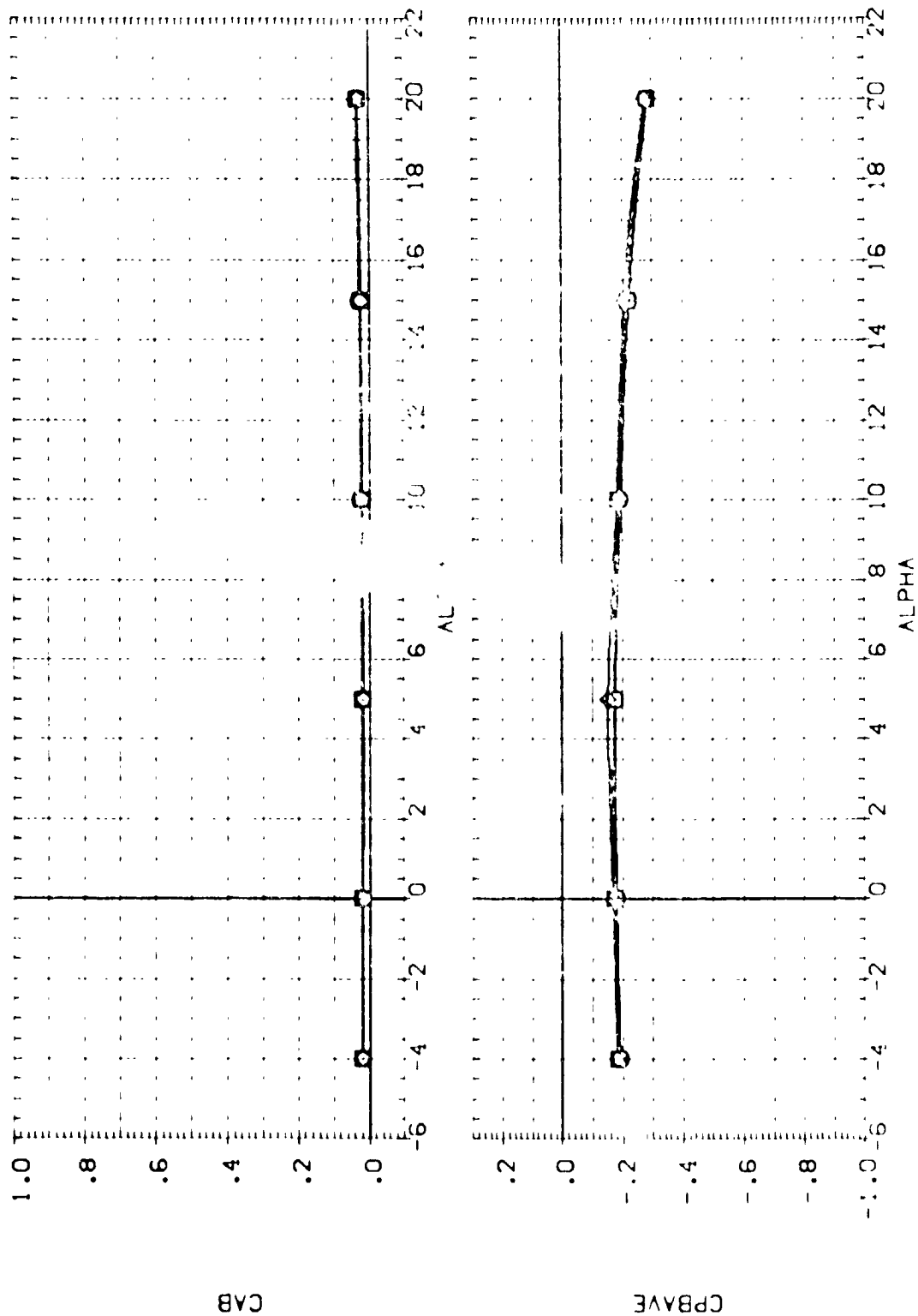


FIG. 35. BASE PRESSURE AND AXIAL FORCE WITH J40. 0 ELEVON AND 0 DELTA PITCH. $\alpha = 0$

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
|----------|--------|---------------------------|--------|------|-------|--------|-----------------------|
| 130524 | C | 0A57B (NAC 713) | .000 | .125 | 1.000 | 20.000 | SREF 4.4.20 80.0 |
| 130523 | C | 0A57B (NAC 713) | .000 | .125 | 1.300 | 20.000 | LREF 19.0.20 70.0 |
| 130522 | C | 0A57B (NAC 713) | .000 | .125 | 1.500 | 20.000 | BREF 17.0.20 60.0 |
| | | | | | | | THRP 42.5.20 50.0 |
| | | | | | | | THRP 10.0.20 40.0 |
| | | | | | | | THRP 14.0.20 30.0 |
| | | | | | | | SCALE .0405 |

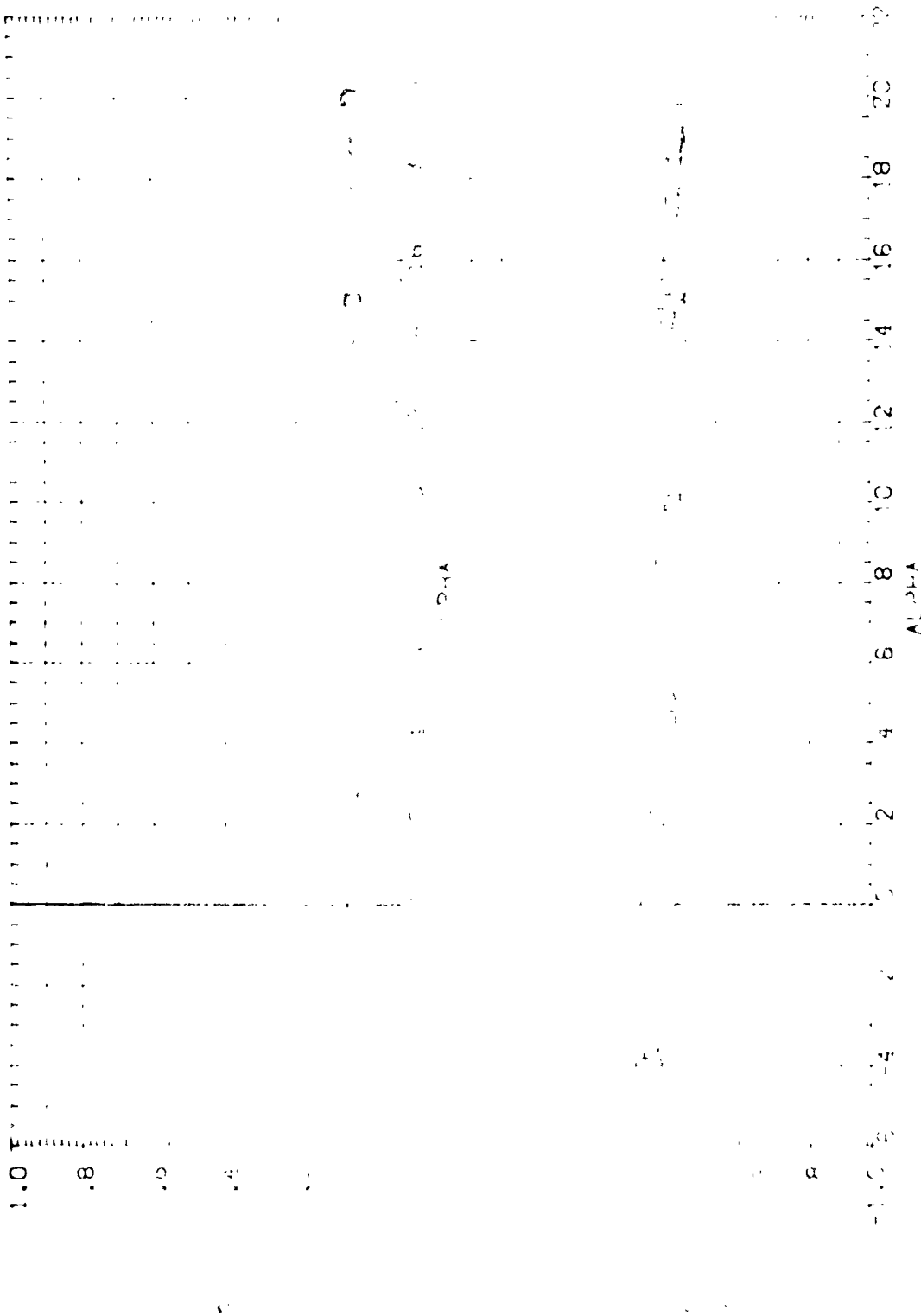


FIG. 13. 0A57B (NAC 713) A/C AIAL FORCE WITH 140, 0 ELEVON A/D 20 BREF 13

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | W/B | PTUP | BDFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|--------|-----------------------|
| (F3V021) | 0A578 (NAAL 713) 816 CS FI J40 V87 E18 | .000 | .286 | 1.000 | 20.000 | SREF 4.4120 50. FT. |
| (F3V020) | 0A578 (NAAL 713) 816 CS FI J40 V87 E18 | .000 | .286 | 1.300 | 20.000 | LREF 19.2300 IN. |
| (F3V019) | 0A578 (NAAL 713) 816 CS FI J40 V87 E18 | .000 | .286 | 1.500 | 20.000 | BREF 37.9350 IN. |
| | | | | | | XREF 43.5980 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

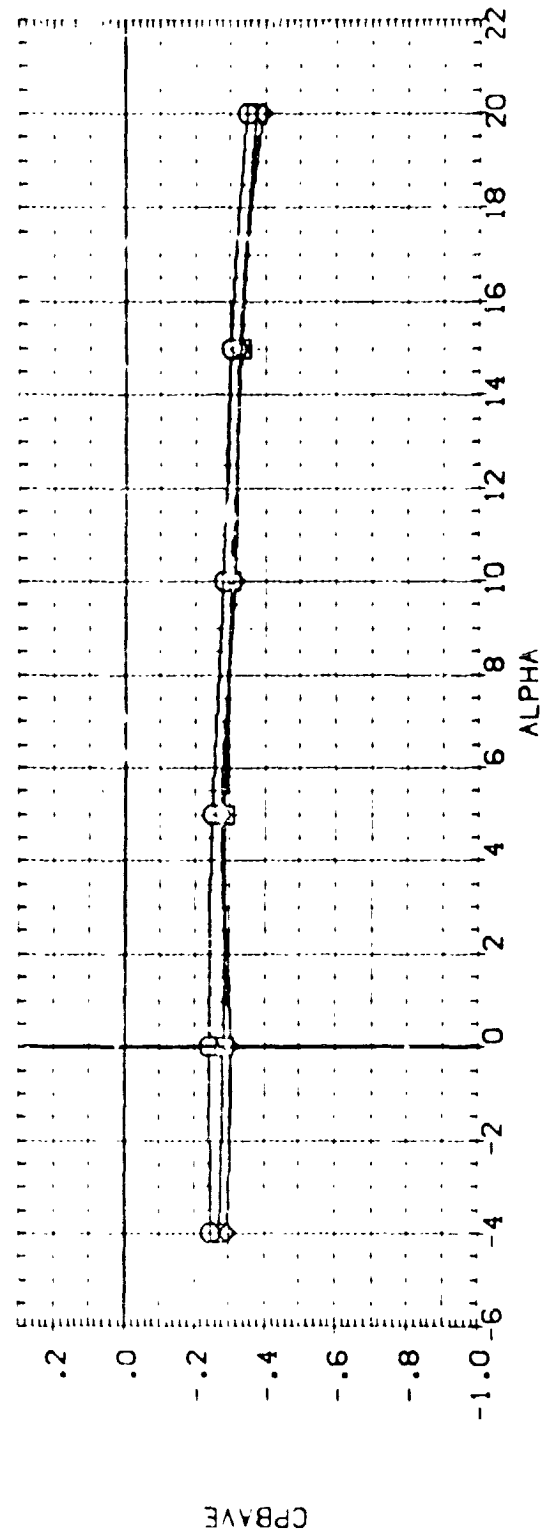
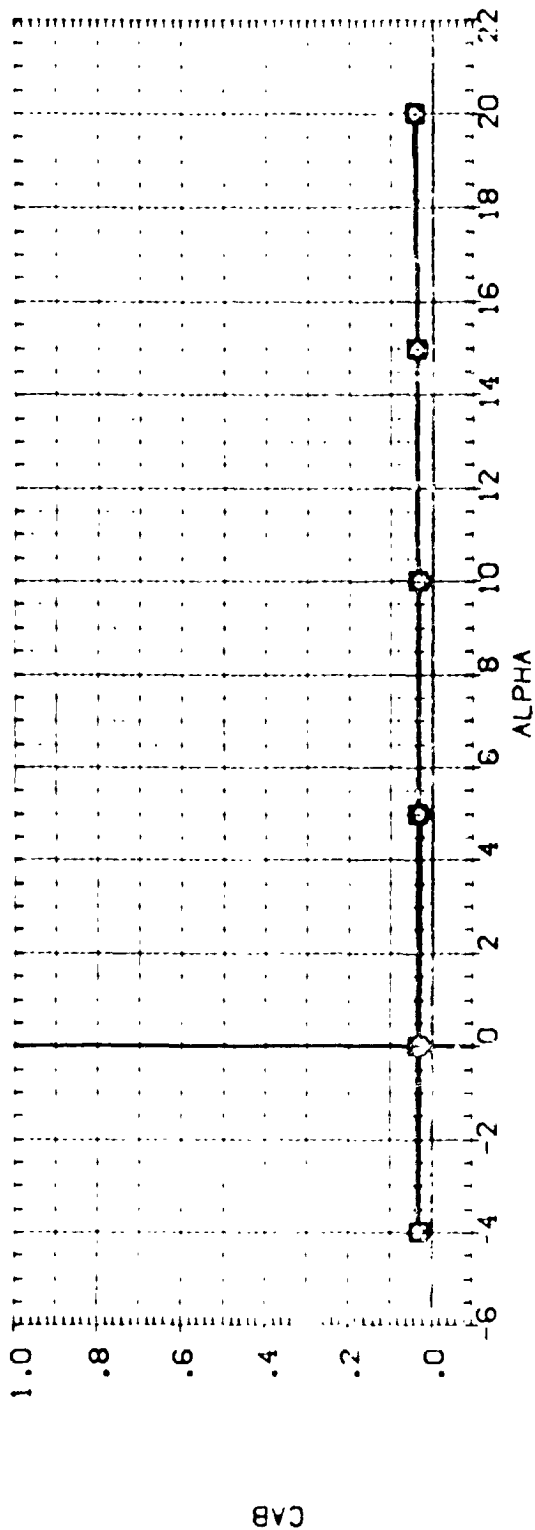


FIG. 36 BASE PRESSURE AND AXIAL FORCE WITH J40 . 0 ELEVON AND 20 BDFLAP
(A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | J40 | V87 E18 | ELEVON | M/R | PTU/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|-----------|-----------|--------|------|-------|---------|-----------------------|
| (H0V033) | 0A578 (NAL 713) | 816 CS FI | 816 CS FI | 15.000 | .038 | 1.000 | -18.000 | SREF 4.4120 SC.FT. |
| (H0V032) | 0A578 (NAL 713) | 816 CS FI | 816 CS FI | 15.000 | .038 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (H0V031) | 0A578 (NAL 713) | 816 CS FI | 816 CS FI | 15.000 | .038 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | | | XREF 43.5500 IN. |
| | | | | | | | | YREF .0000 IN. |
| | | | | | | | | ZREF -.4050 IN. |
| | | | | | | | | SCALE .0405 |

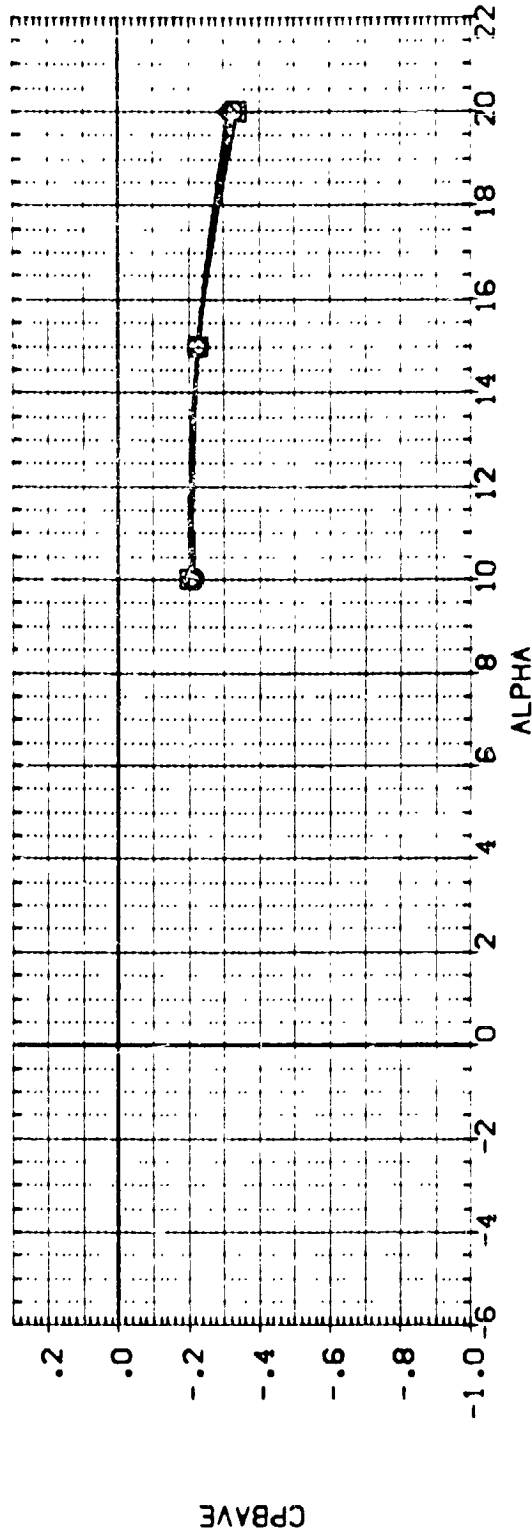
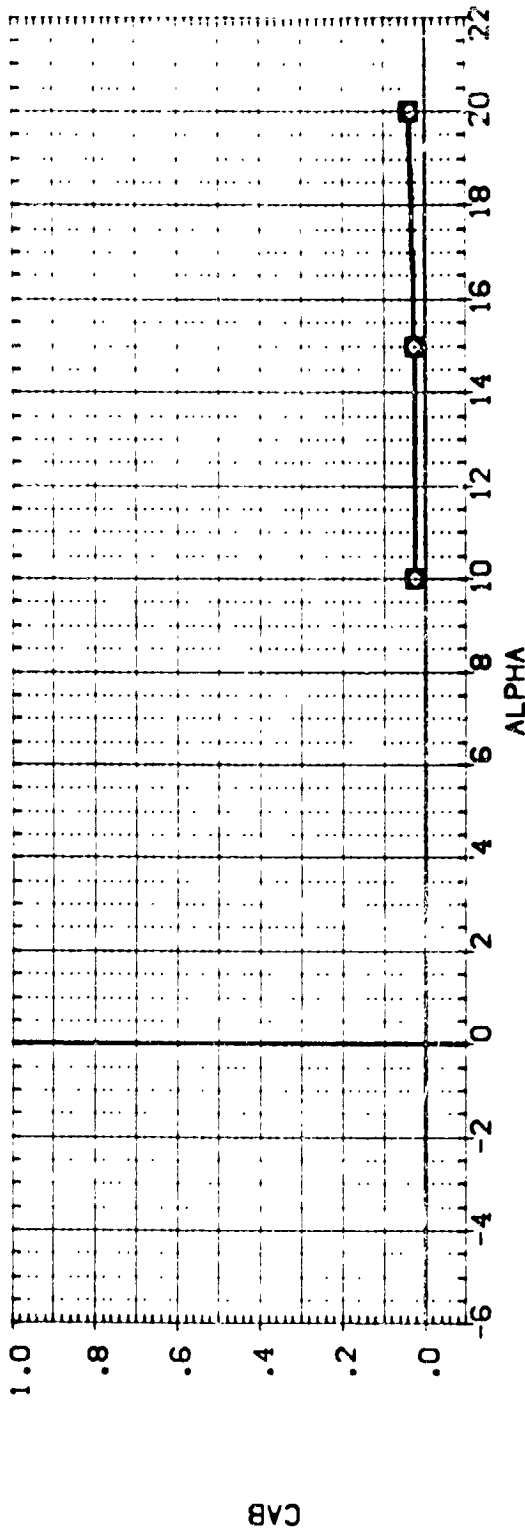


FIG. 37 BASE PRESSURE AND AXIAL FORCE WITH J40 . 15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/R | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|----------------------------|--------|------|-------|---------|-----------------------|
| (FDM030) | QAS78 (NAAL 713) B16 CS F1 | 15.000 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ. FT. |
| (FDM029) | QAS78 (NAAL 713) B16 CS F1 | 15.000 | .125 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDM028) | QAS78 (NAAL 713) B16 CS F1 | 15.000 | .125 | 1.500 | -18.000 | BREF 37.5350 IN. |
| | | | | | | XMRP 43.5500 IN. |
| | | | | | | YMRP .0000 IN. |
| | | | | | | ZMRP -.4050 IN. |
| | | | | | | SCALE .0405 |

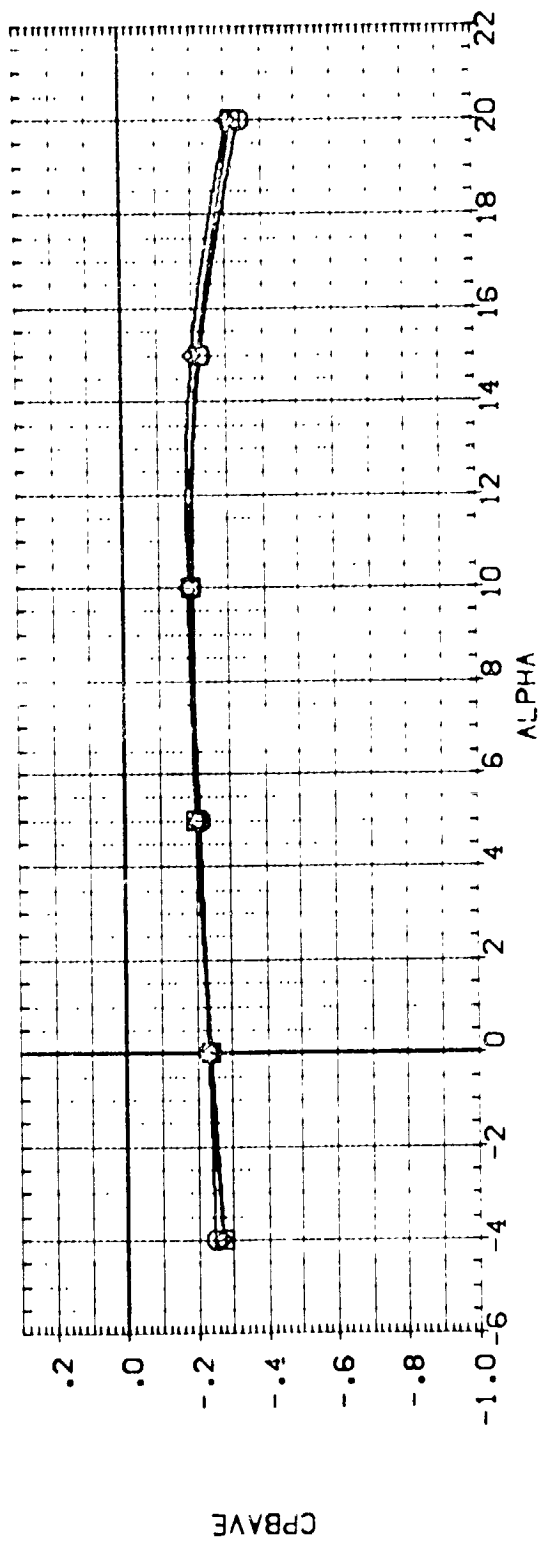
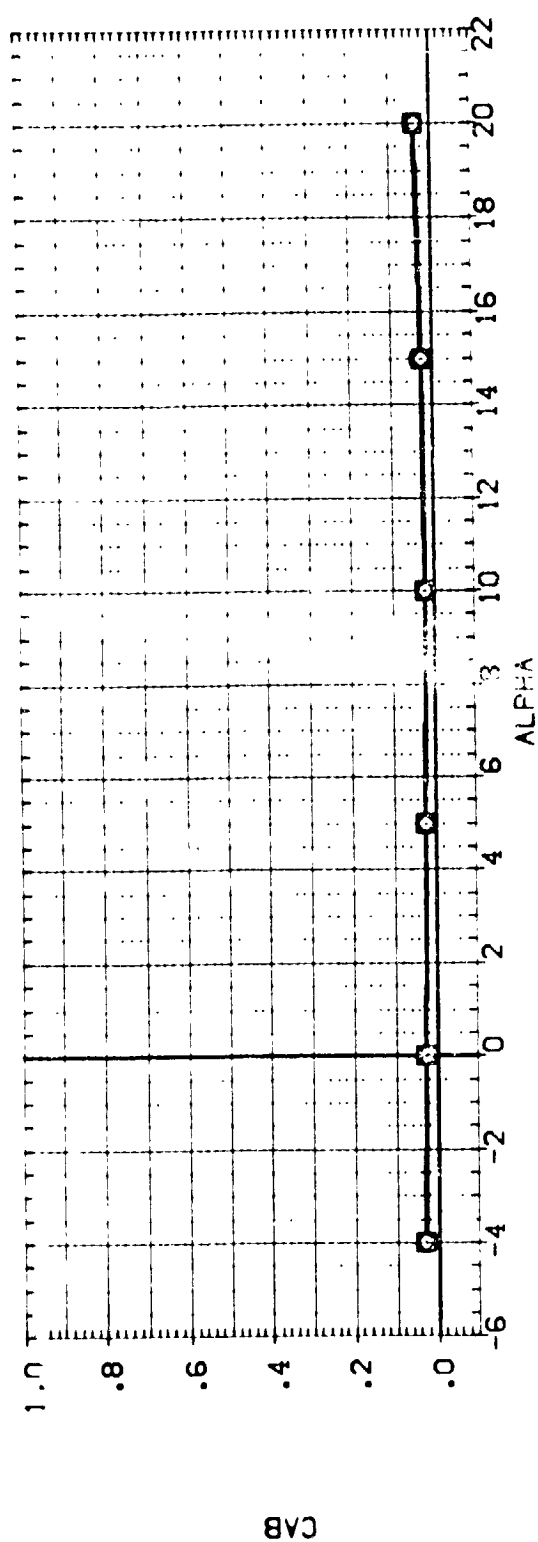


FIG. 37 BASE PRESSURE AND AXIAL FORCE WITH J40 . 15 ELEVON AND -18 BOFLAP
(A)MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTN/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| (FDV036) | QAS78 (NAL 713) 816 CS F1 | 15.000 | .286 | 1.000 | -18.000 | SREF 4.4100 SQ.FT. |
| (FDV035) | QAS78 (NAL 713) 816 CS F1 | 15.070 | .286 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDV034) | QAS78 (NAL 713) 816 CS F1 | 15.000 | .286 | 1.500 | -18.000 | BREF 37.9300 IN. |
| | | | | | | XREF 43.5300 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF .4050 IN. |
| | | | | | | SCALE .0405 |

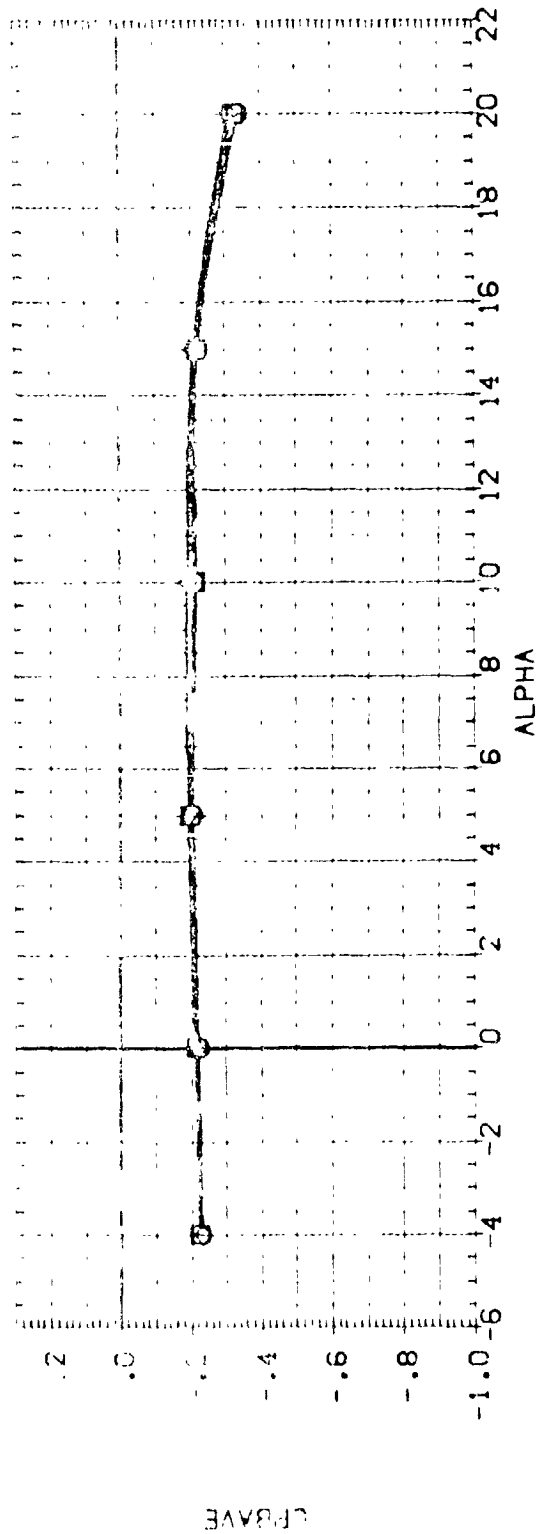
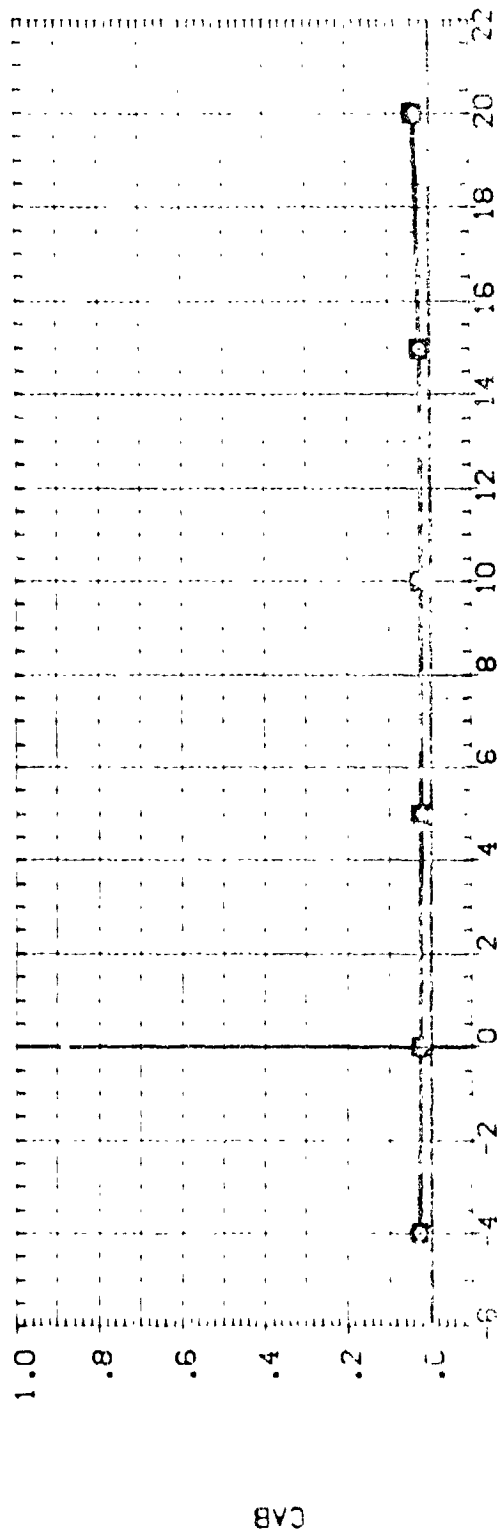


FIG. 37 BASE PRESSURE AND AXIAL FORCE WITH J40, 15 ELEVON AND -18 BDFLAP
 (A)MACH = .20 P. E. 170



| | | | | | | | | | | | |
|-----------------|---|---------------------------|-----------|--------|---------|-------|------|--------|---------|-----------------------|---------------|
| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | PTN/P | | BDFLAP | | REFERENCE INFORMATION | |
| (FDV056) | □ | 8A578 (NAAL 713) | 816 CS F1 | J41 | V87 E18 | .000 | .000 | 1.000 | -19.000 | SREF | 4.4120 SQ.FT. |
| (FDV055) | □ | 8A578 (NAAL 713) | 816 CS F1 | J41 | V87 E18 | .000 | .000 | 1.300 | -19.000 | LREF | 19.1300 IN. |
| | | | | | | | | | | BREF | 37.0350 IN. |
| | | | | | | | | | | XREF | 43.0680 IN. |
| | | | | | | | | | | YREF | .0000 IN. |
| | | | | | | | | | | ZREF | -.0050 IN. |
| | | | | | | | | | | SCALE | .0405 |

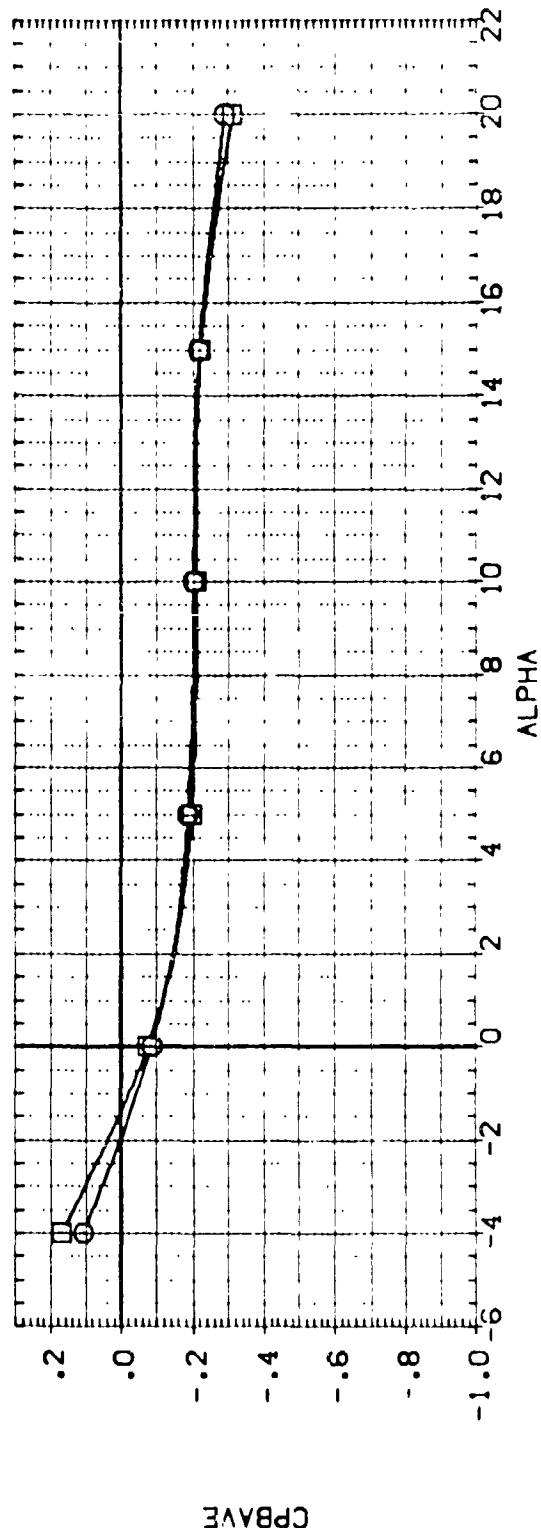
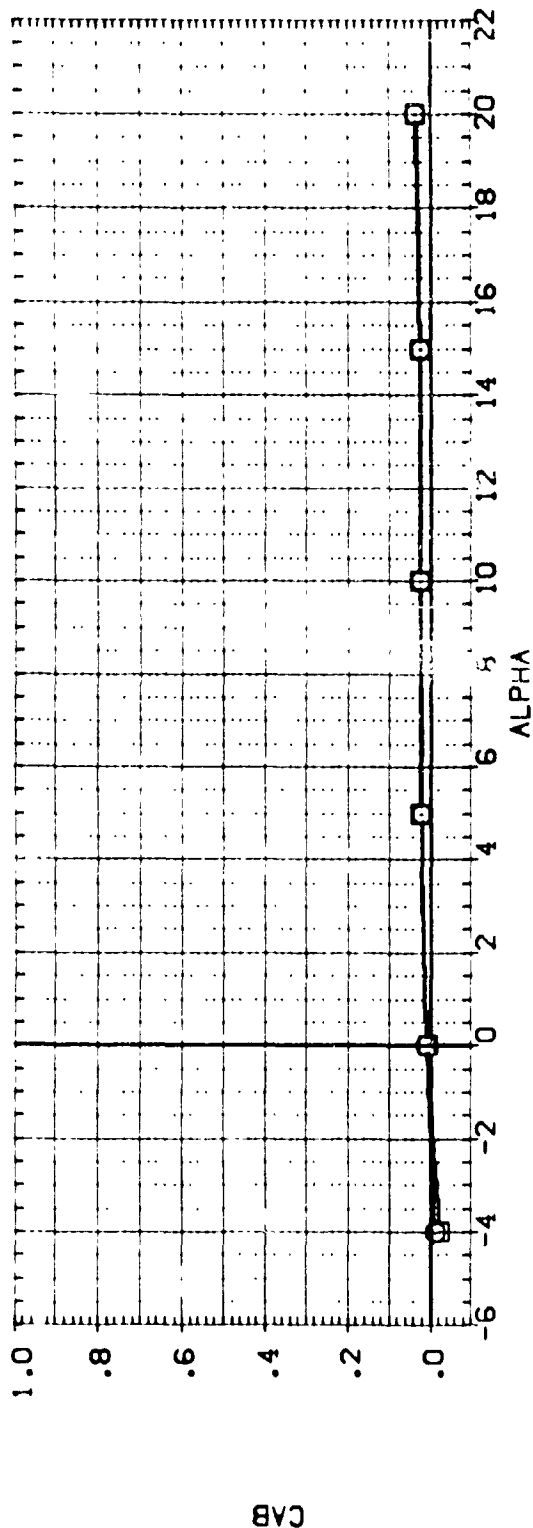


FIG. 38 BASE PRESSURE AND AXIAL FORCE WITH J41 . 0 ELEVON AND -18 BDFLAP
 CA0HACH = .20

| | | | | | | |
|-----------------|---|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (FDV058) | 0A578 (NAVAL 713) B16 CS F1 J41 V67 E18 | .000 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV057) | 0A578 (NAVAL 713) B16 CS F1 J41 V67 E18 | .000 | .125 | 1.300 | -18.000 | LREF 19.7300 IN. |
| | | | | | | BREF 37.9350 IN. |
| | | | | | | XREF 43.5030 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -4050 IN. |
| | | | | | | SCALE .0405 |

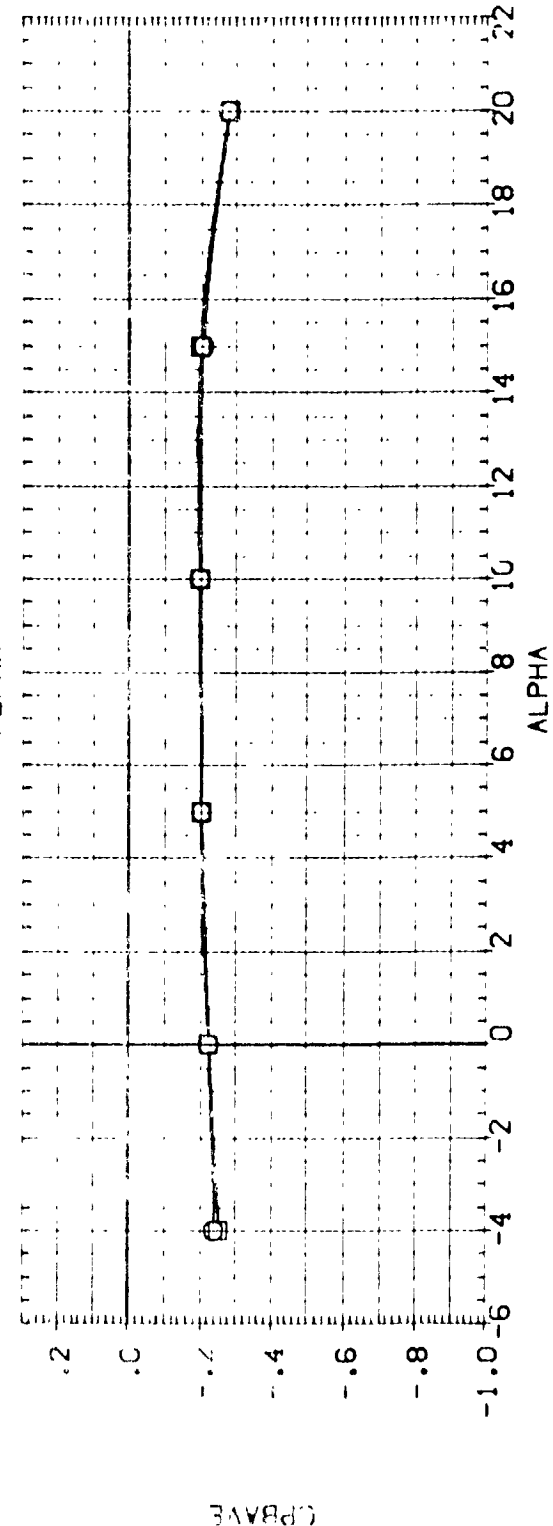
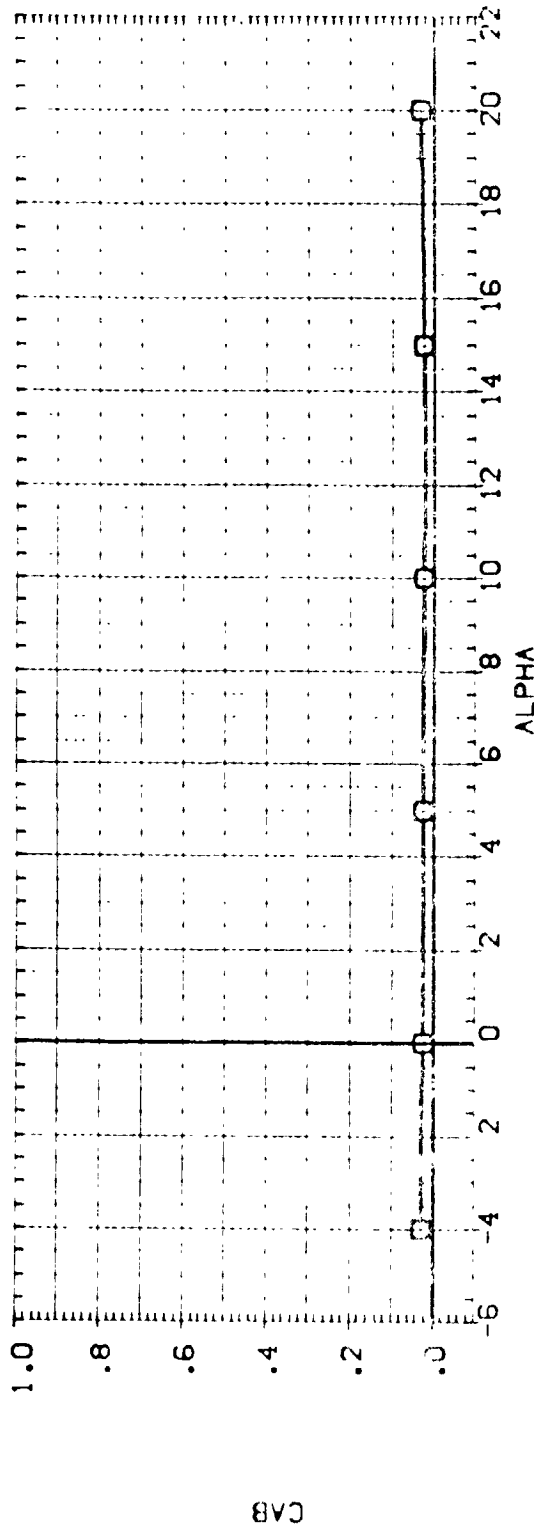


FIG. 38 BASE PRESSURE AND AXIAL FORCE WITH J41, 0 ELEVON AND -18 BOFLAP
 CAJMAC = .20

| | | | | | | | | | | | | | |
|-----------------|---|---------------------------|-----------|--------|---------|------|------|-------|---------|--------|---------|-----------------------|--|
| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | H/B | | PTN/P | | BDFLAP | | REFERENCE INFORMATION | |
| (FDV053) | □ | 0A578 (NAAL 713) | 816 CS F1 | J41 | V87 E18 | .000 | .286 | 1.000 | -18.000 | SREF | 4.4120 | SC.FT. | |
| (FDV052) | □ | 0A578 (NAAL 713) | 816 CS F1 | J41 | V87 E18 | .000 | .286 | 1.300 | -18.000 | LRCF | 19.7300 | IN. | |
| | | | | | | | | | | BRCF | 37.9350 | IN. | |
| | | | | | | | | | | XMRP | 43.5600 | IN. | |
| | | | | | | | | | | YMRP | .0000 | IN. | |
| | | | | | | | | | | ZMRP | -.4050 | IN. | |
| | | | | | | | | | | SCALE | .0405 | | |

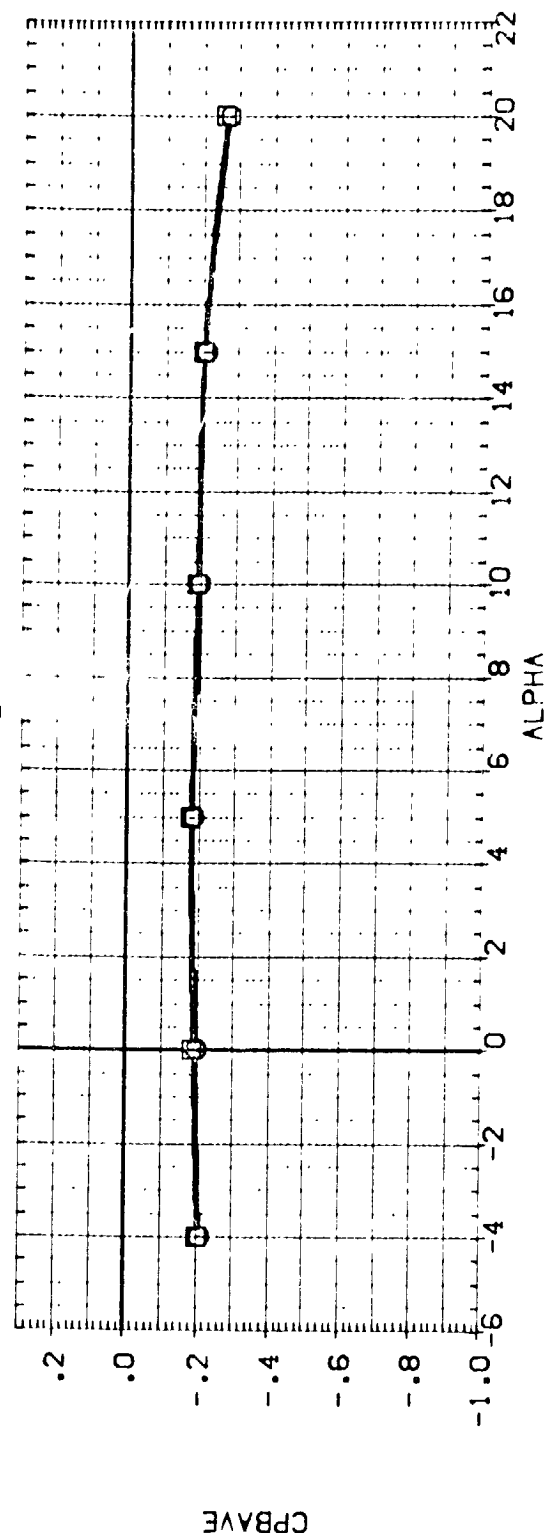
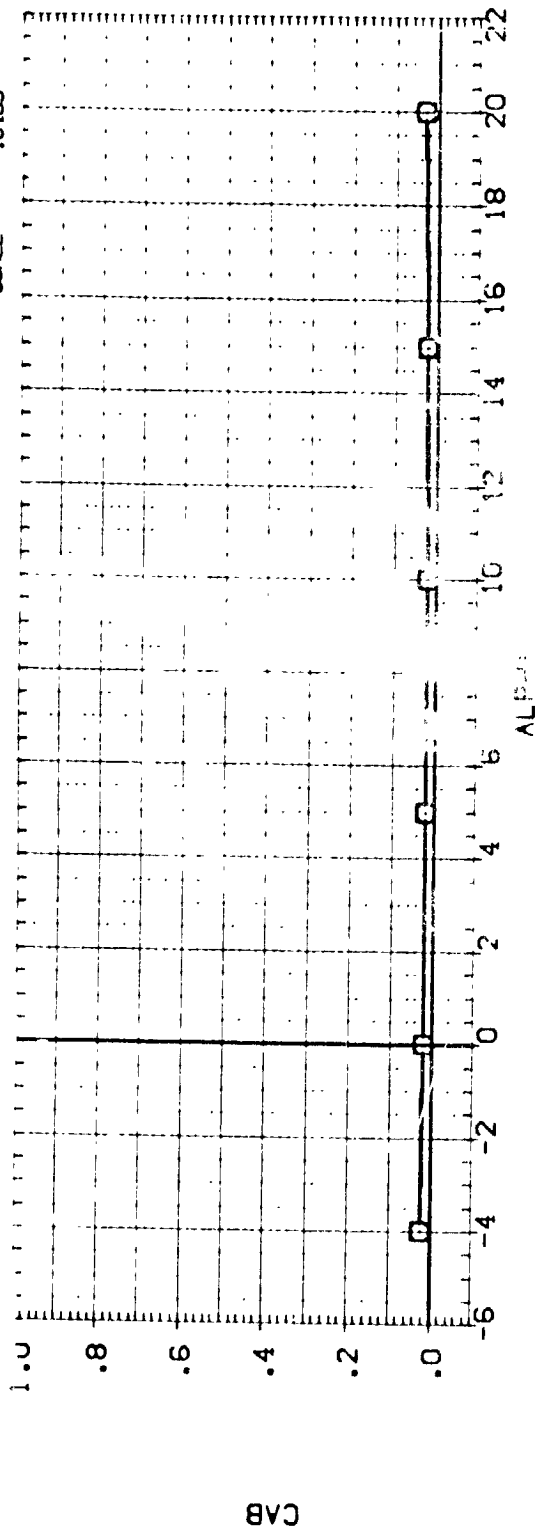


FIG. 38 BASE PRESSURE AND AXIAL FORCE WITH J41, 0 ELEVON AND 0 BDFLAP
 CAJ MACH = .20

| | | | | | | | | |
|-----------------|------|-----------|-------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONF | IGURATION | DESCRIPTION | ELEVON | HVB | YINP | BOFLAP | REFERENCE INFORMATION |
| (5DV049) | Q | 2579 | (NAAL 713) | 15.000 | .039 | 1.000 | -18.000 | SREF 4.4120 52. FT. |
| (5DV048) | Q | 0A579 | (NAAL 713) | 15.000 | .039 | 1.300 | -18.000 | LREF 19.2300 IN. |
| | | | | | | | | BREF 37.5350 IN. |
| | | | | | | | | XTRP 49.5550 IN. |
| | | | | | | | | YTRP .0000 IN. |
| | | | | | | | | ZTRP -.4050 IN. |
| | | | | | | | | SCALE .0425 |

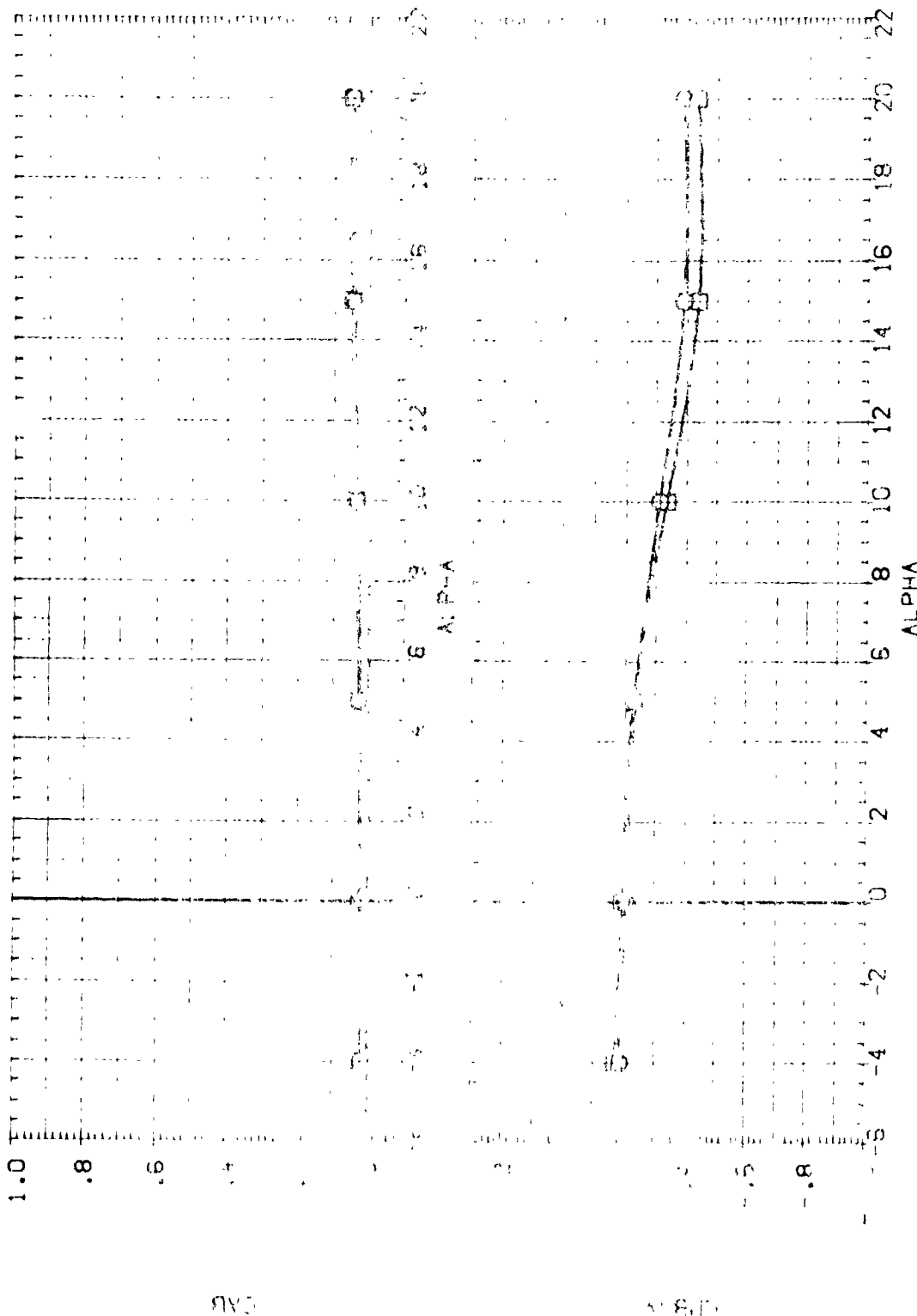


FIG. 39 BASE PRESSURE AND AXIAL FORCE WITH J41, 15 ELEVON AND -18 BOFLAP
 (ADMACH = .00)



| | | | | | | | | | | | |
|-----------------|------------------|---------------------------|-----|--------|-------|---------|-------|---------|---------|-----------------------|--|
| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | | PTV/P | | BOFLAP | | REFERENCE INFORMATION | |
| [FDV047] | 0A578 (NAAL 713) | B16 CS F1 | J41 | 15.000 | 1.000 | -18.000 | SREF | 4.4120 | 50. FT. | | |
| [FDV046] | 0A578 (NAAL 713) | B16 CS F1 | J41 | 15.000 | 1.300 | -18.000 | LREF | 19.2300 | IN. | | |
| | | | | | | | BREF | 37.9350 | IN. | | |
| | | | | | | | XREF | 43.5500 | IN. | | |
| | | | | | | | YREF | 10.0000 | IN. | | |
| | | | | | | | ZREF | -40.500 | IN. | | |
| | | | | | | | SCALE | .0405 | | | |

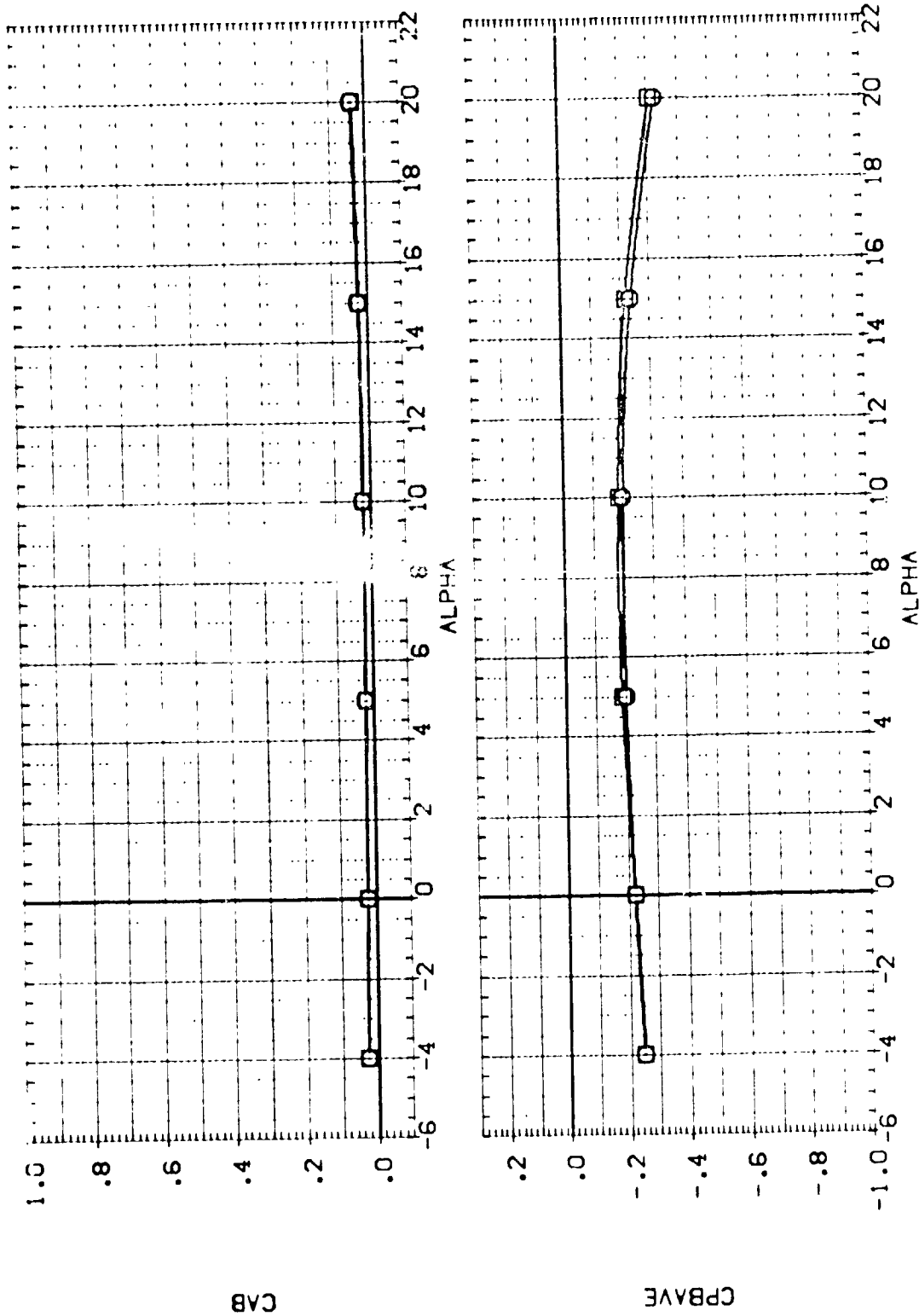


FIG. 39 BASE PRESSURE AND AXIAL FORCE WITH J41 , 15 ELEVON AND -18 BOFLAP
 (A)MACH = .20

| | | | | | | |
|-----------------|---------------------------|--------|------|-------|---------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | M/B | PTV/P | BOFLAP | REFERENCE INFORMATION |
| (FDV051) | 0A578 (NAL 713) 816 CS F1 | 15.000 | .286 | 1.000 | -18.000 | SREF 4.4120 50.FT. |
| (FDV050) | 0A578 (NAL 713) 816 CS F1 | 15.000 | .286 | 1.300 | -18.000 | LREF 19.2300 IN. |
| | | | | | | BREF 37.9350 IN. |
| | | | | | | XREF 43.5590 IN. |
| | | | | | | YREF 1.0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

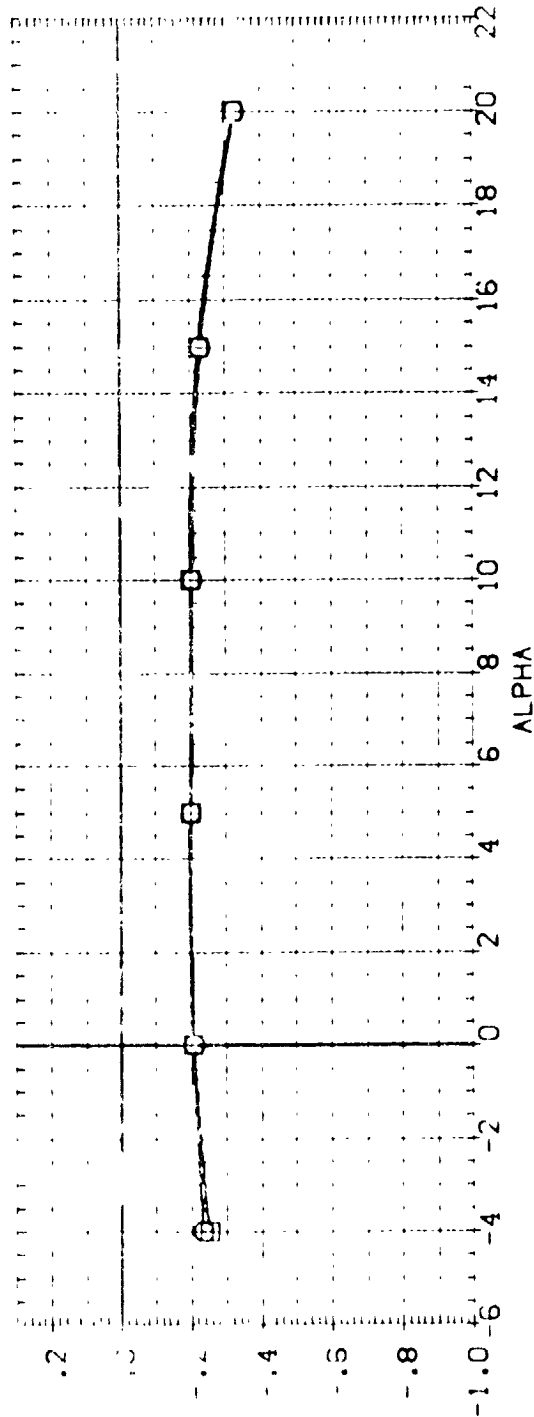
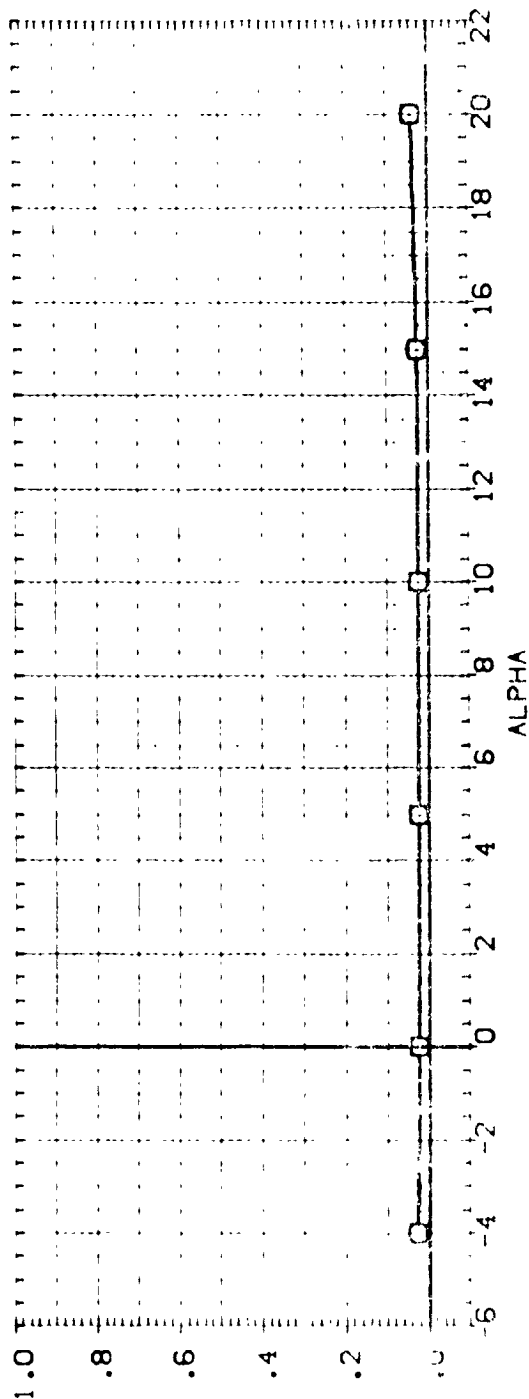


FIG. 39 BASE PRESSURE AND AXIAL FORCE WITH J41, 15 ELEVON AND -18 BOFLAP

(ADMAC) = .20



| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/B | PTV/P | BDFLAP | REFERENCE INFORMATION |
|-----------------|---|--------|------|-------|---------|-----------------------|
| (H0V064) | 0A57B (NAAL 7:13) 816 CS F1 J42 V67 E18 | .000 | .039 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (H0V063) | 0A57B (NAAL 7:13) 816 CS F1 J42 V67 E18 | .000 | .039 | .300 | -18.000 | LREF 19.2300 IN. |
| (Y0V062) | 0A57B (NAAL 7:13) 816 CS F1 J42 V67 E18 | .000 | .039 | .500 | -18.000 | BREF 37.8250 IN. |
| | | | | | | XREF 43.5500 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

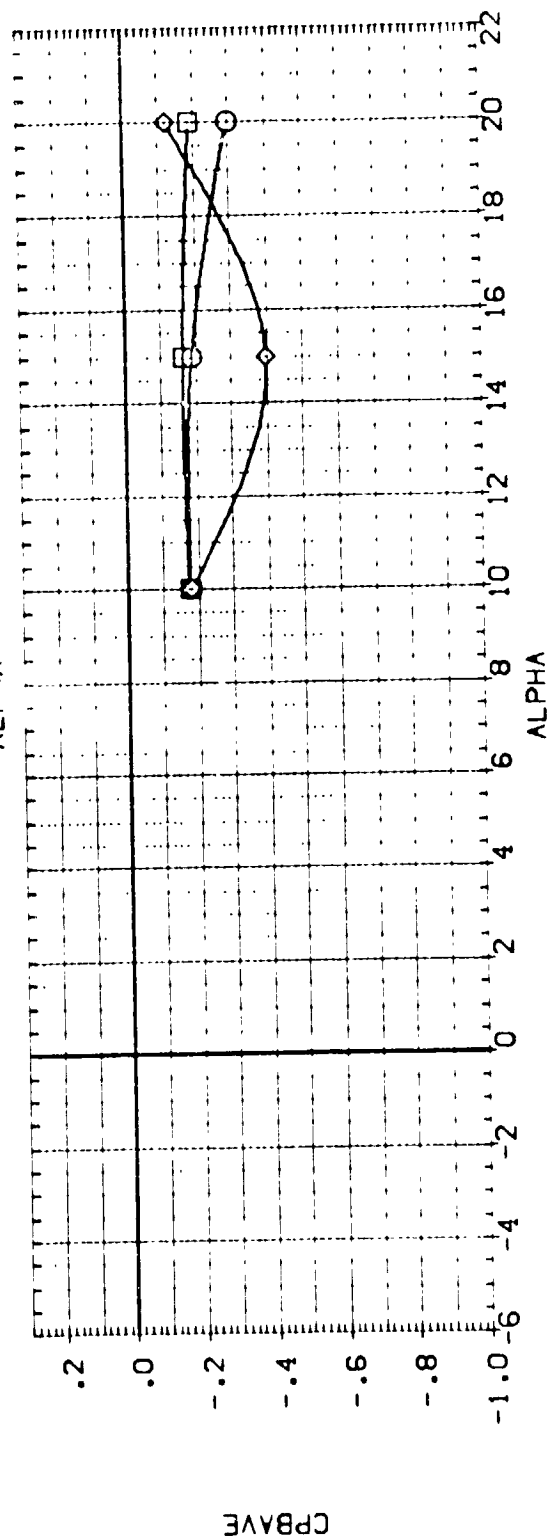
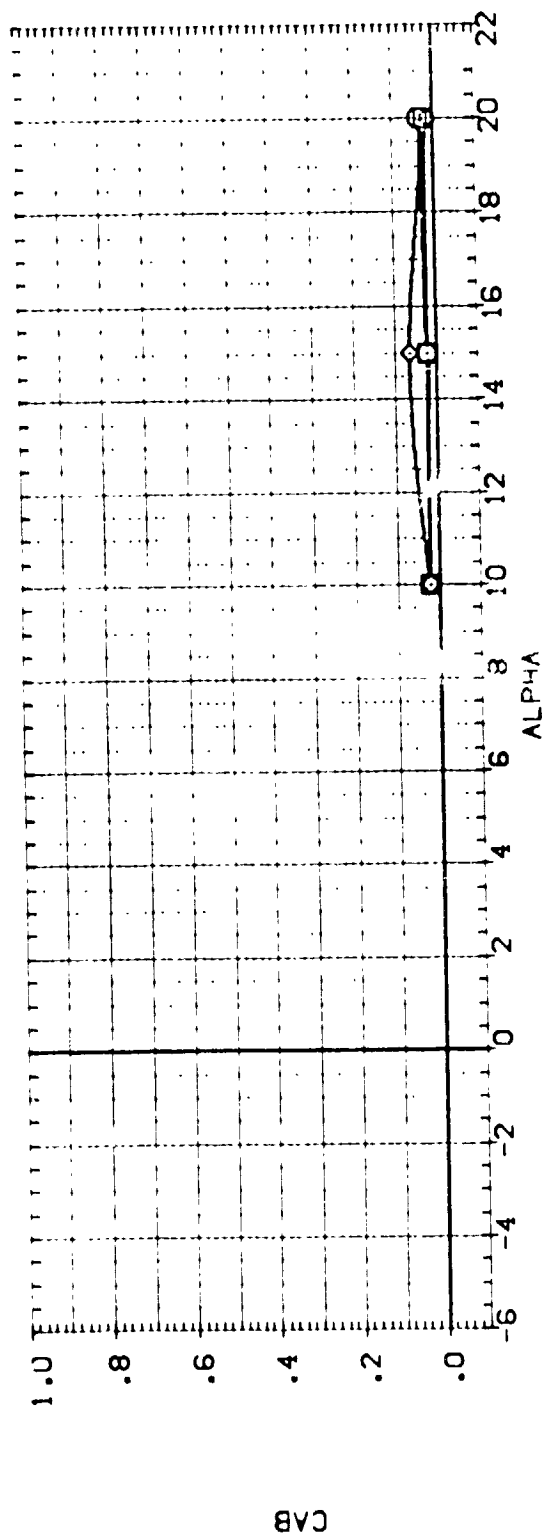


FIG. 40 BASE PRESSURE AND AXIAL FORCE WITH J42 , 0 ELEVON AND -18 BDFLAP
(A) MACH = .20

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | HVB | PTNP | BDFLAP | REFERENCE INFORMATION |
|-----------------|--|--------|------|-------|---------|-----------------------|
| (FDV061) | QAS7B (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .125 | 1.000 | -18.000 | SREF 4.4120 SQ.FT. |
| (FDV060) | QAS7B (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .125 | 1.300 | -18.000 | LREF 19.2300 N. |
| (FDV059) | QAS7B (NAAL 713) B16 CS F1 J42 V87 E18 | .000 | .125 | 1.500 | -18.000 | BREF 37.8750 N. |
| | | | | | | XTRP 43.5030 N. |
| | | | | | | YTRP .0000 N. |
| | | | | | | ZTRP -.4050 N. |
| | | | | | | SCALE .0405 |

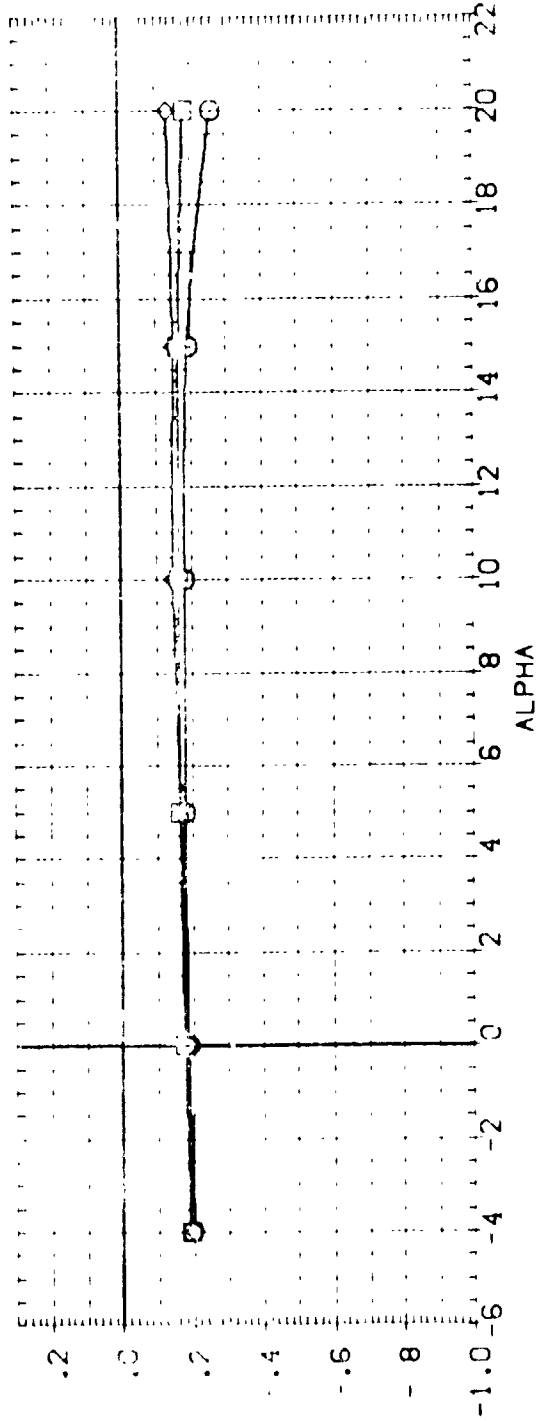
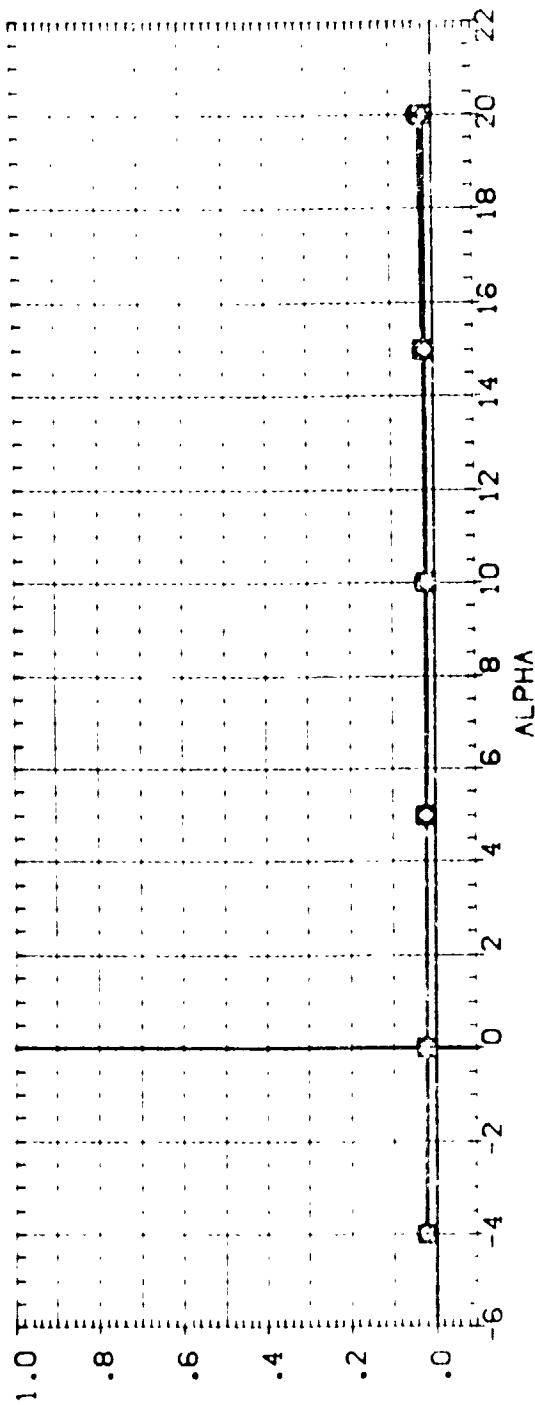


FIG. 40 BASE PRESSURE AND AXIAL FORCE WITH J42, 0 ELEVON AND -18 BDFLAP

(A)MACH = .20



| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
|-----------------|---------------------------------------|--------|------|-------|---------|-------------------------|
| (FDV070) | 0A57B (NAL 713) 816 CS F1 J42 V87 E18 | .000 | .286 | 1.000 | -18.000 | SREF 4.4120 90. FT. IN. |
| (FDV089) | 0A57B (NAL 713) 816 CS F1 J42 V87 E18 | .000 | .286 | 1.300 | -18.000 | LREF 19.2300 IN. |
| (FDV088) | 0A57B (NAL 713) 816 CS F1 J42 V87 E18 | .000 | .286 | 1.500 | -18.000 | BREF 37.9350 IN. |
| | | | | | | XREF 43.5980 IN. |
| | | | | | | YREF .0070 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

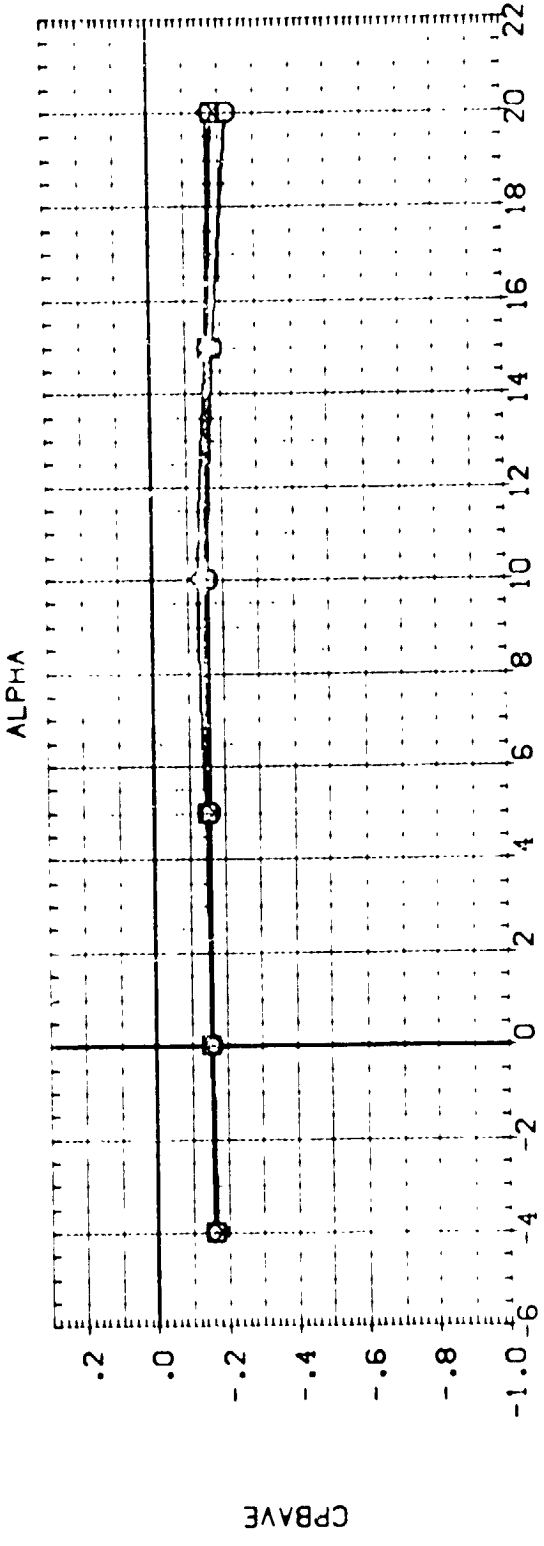
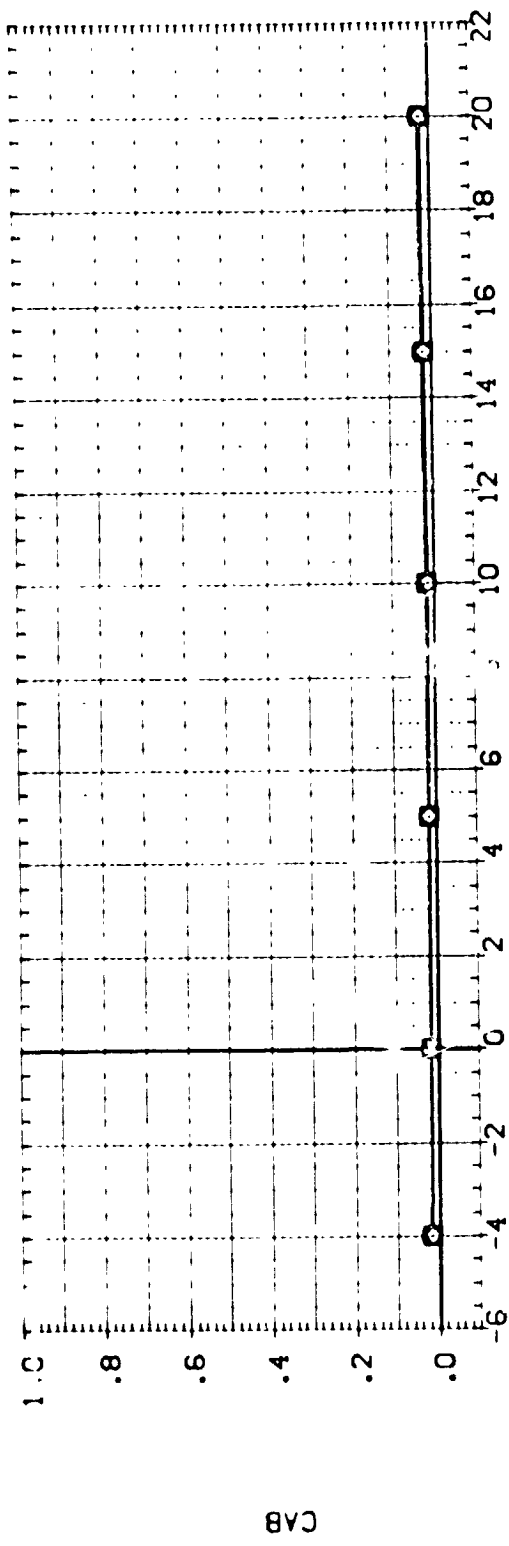


FIG. 40 BASE PRESSURE AND AXIAL FORCE WITH J42 • 0 ELEVON AND -18 BOFLAP
 (A)MACH .20 PAGE 179

| | | | | | | |
|-----------------|---------------------------|--------|------|-------|--------|-----------------------|
| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | H/V | PTN/P | BOFLAP | REFERENCE INFORMATION |
| (FD-072) | QAS7B (NAIL 713) 8:2 CS | .000 | .286 | 1.000 | | SREF 4.4120 SQ.FT. |
| (FD-071) | QAS7B (NAIL 713) 8:2 CS | .000 | .286 | 1.300 | | LREF 19.2300 IN. |
| | | | | | | BREF 37.9350 IN. |
| | | | | | | XREF 43.5600 IN. |
| | | | | | | YREF .0000 IN. |
| | | | | | | ZREF -.4050 IN. |
| | | | | | | SCALE .0405 |

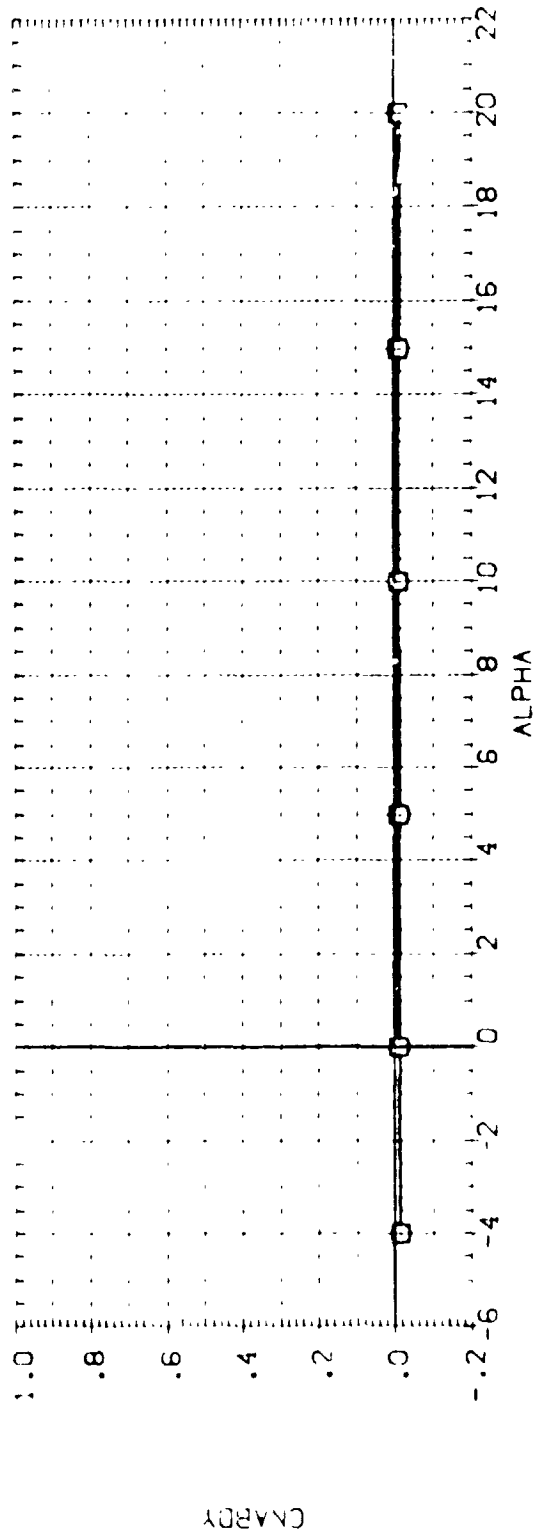
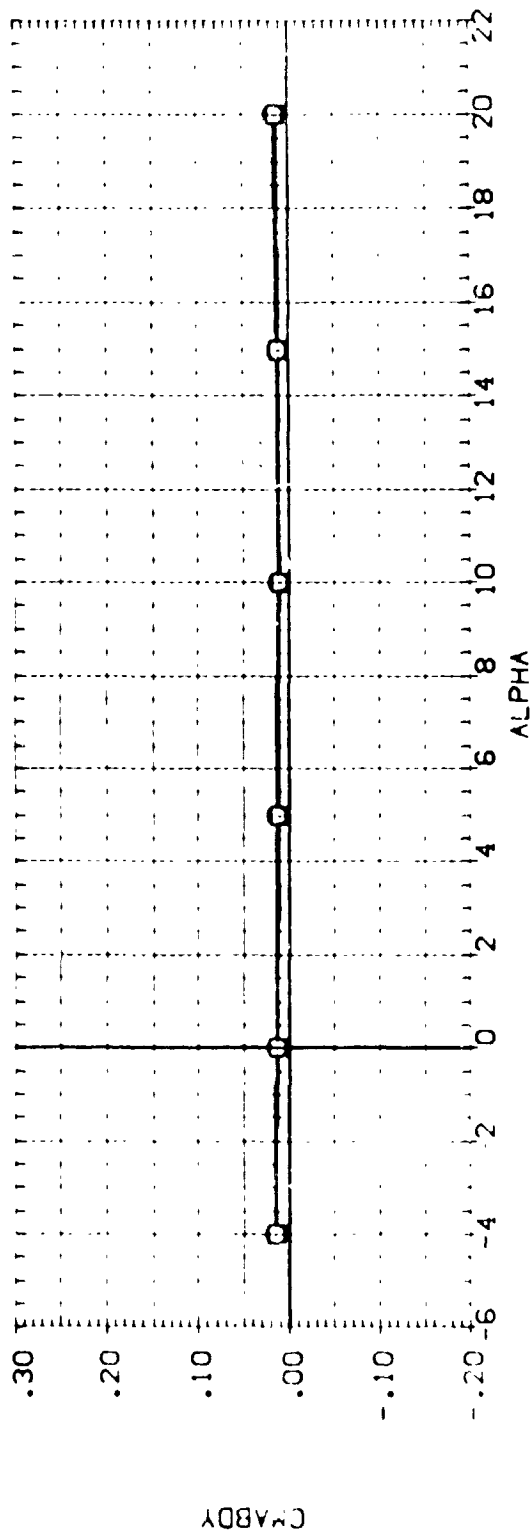


FIG. 4: INTEGRATED AFTERBODY FORCE COEFFICIENTS

CADMACH = .20

DATA SET SYMBOL: 9
(FD-072)
(FS-071)

CONFIGURATION DESCRIPTION
84578 (NALL 713) 812 CS
84578 (NALL 713) 812 CS

J43 V87 F18
J42 V87 F18

ELEVON W/B PTN/P BOFLAP
.000 .286 1.000
.000 .286 1.300

REFERENCE INFORMATION
SREF 4.4120 SQ.FT.
LREF 19.2500 IN.
BREF 37.9350 IN.
XTRP 43.5380 IN.
YTRP .0000 IN.
ZTRP -.4050 IN.
SCALE .0405

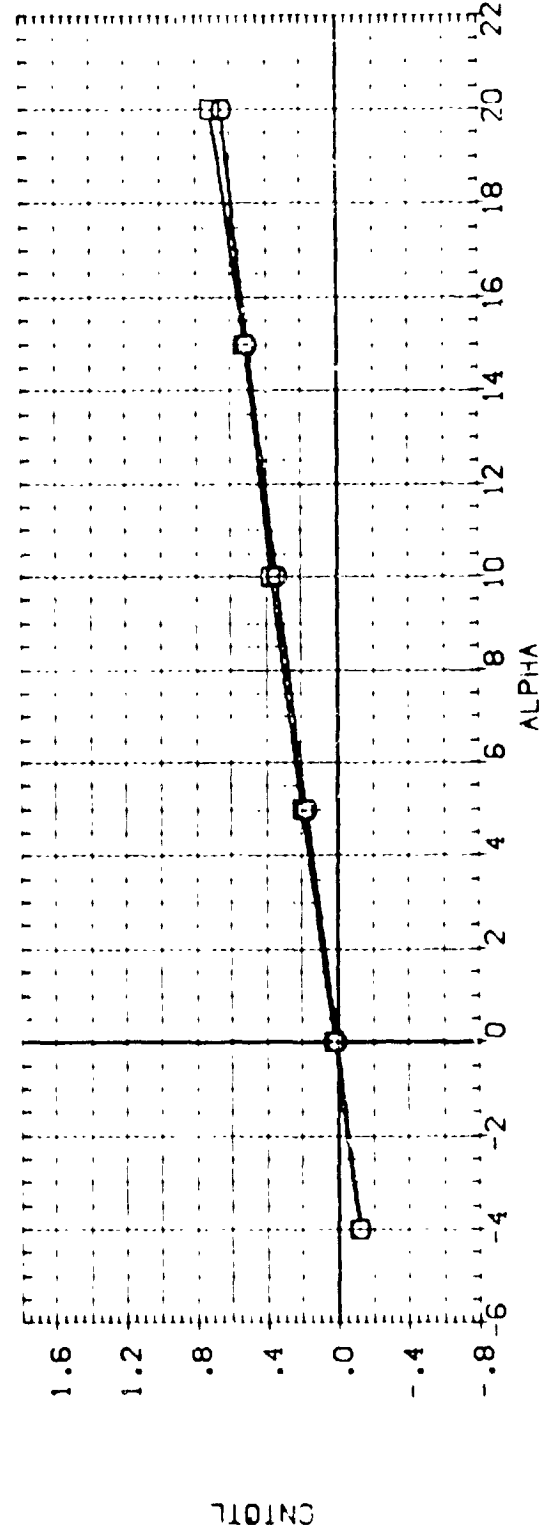
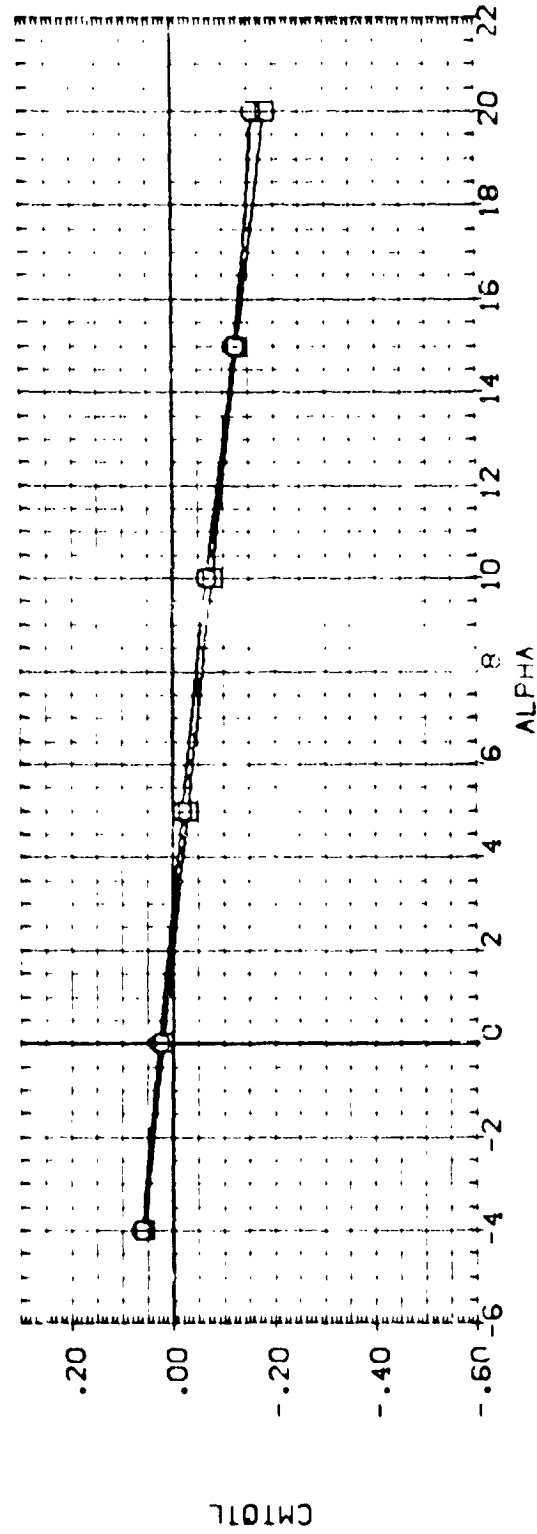


FIG. 41 INTEGRATED AFTERBODY FORCE COEFFICIENTS

CADMACH = .20

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU03)

| | | | | | | | | | |
|--------|-----|-------|------|-------------------|-------|--------|---------|-----|--------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | | | |
| | | | | BETA | PTN/P | BOFLAP | ELEVON | | |
| | | | | | | | | H/B | BOFLAP |
| | | | | | | | | | |
| | | | | .000 | .000 | .000 | 1.000 | | |
| | | | | .039 | .000 | .000 | -18.000 | | |
| | | | | .000 | .000 | .000 | | | |

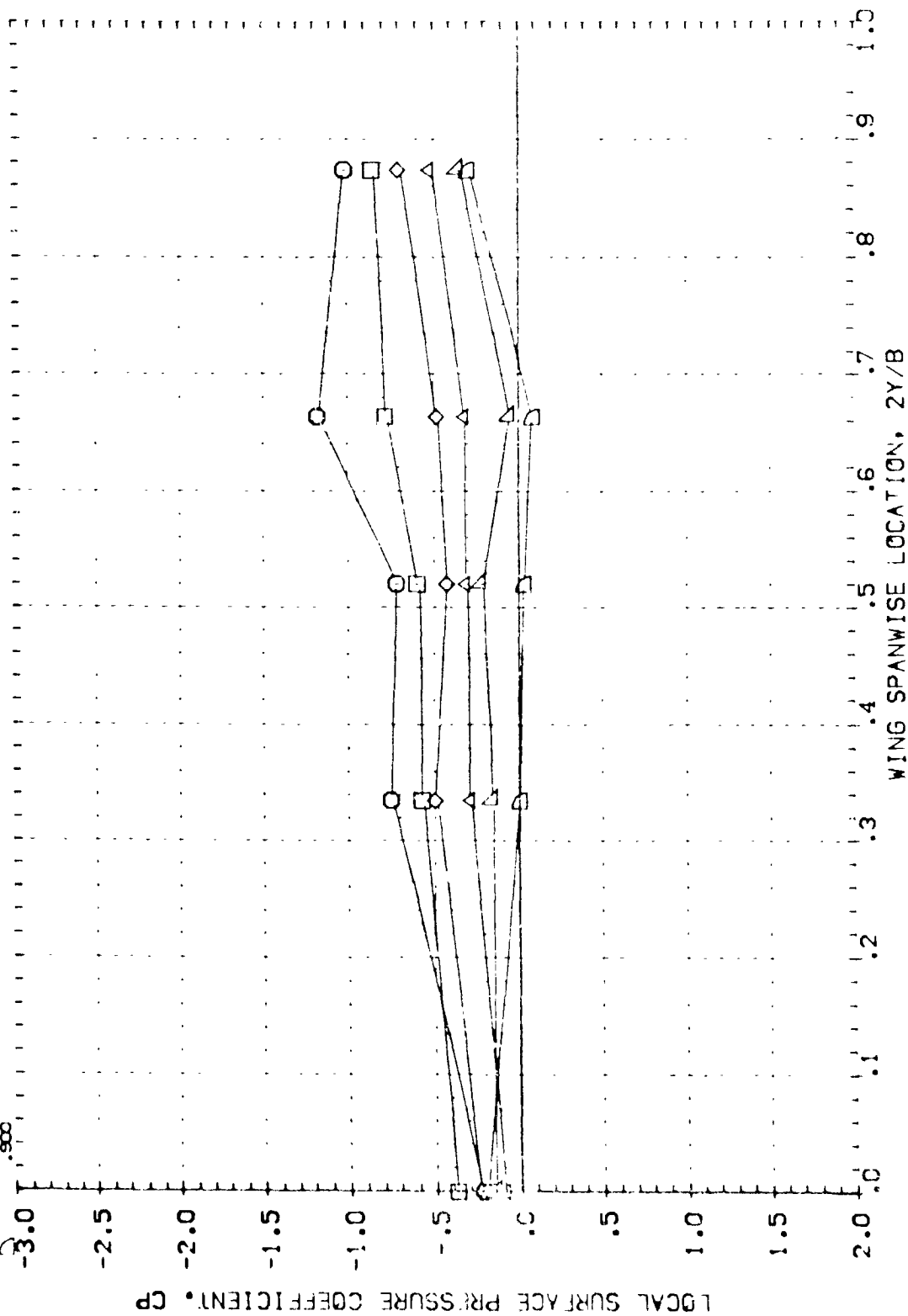


FIG 42 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B B160SF1 J40 W87E18 WING UPPER SURFACE (RDVU06)

| | | | | | |
|------|-------|------|-------------------|-------|---------|
| X/C | ALPHA | MACH | PARAMETRIC VALUES | | |
| | | | BETA | PTN/P | ELEVON |
| .150 | .010 | .165 | .000 | .000 | 1.000 |
| .300 | | | .125 | .000 | -18.000 |
| .450 | | | | | |
| .600 | | | | | |
| .750 | | | | | |
| .900 | | | | | |

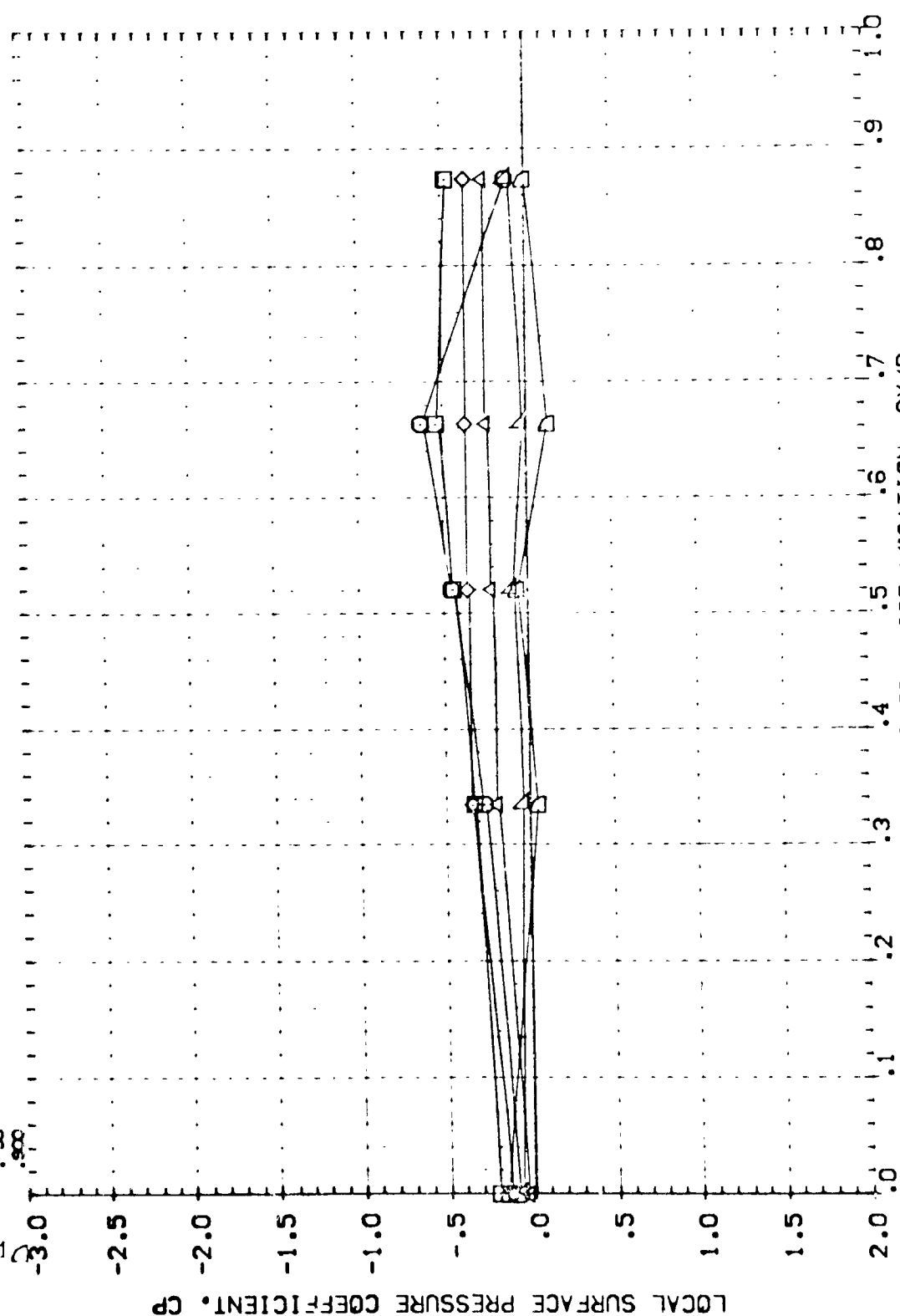


FIG 42 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU06)

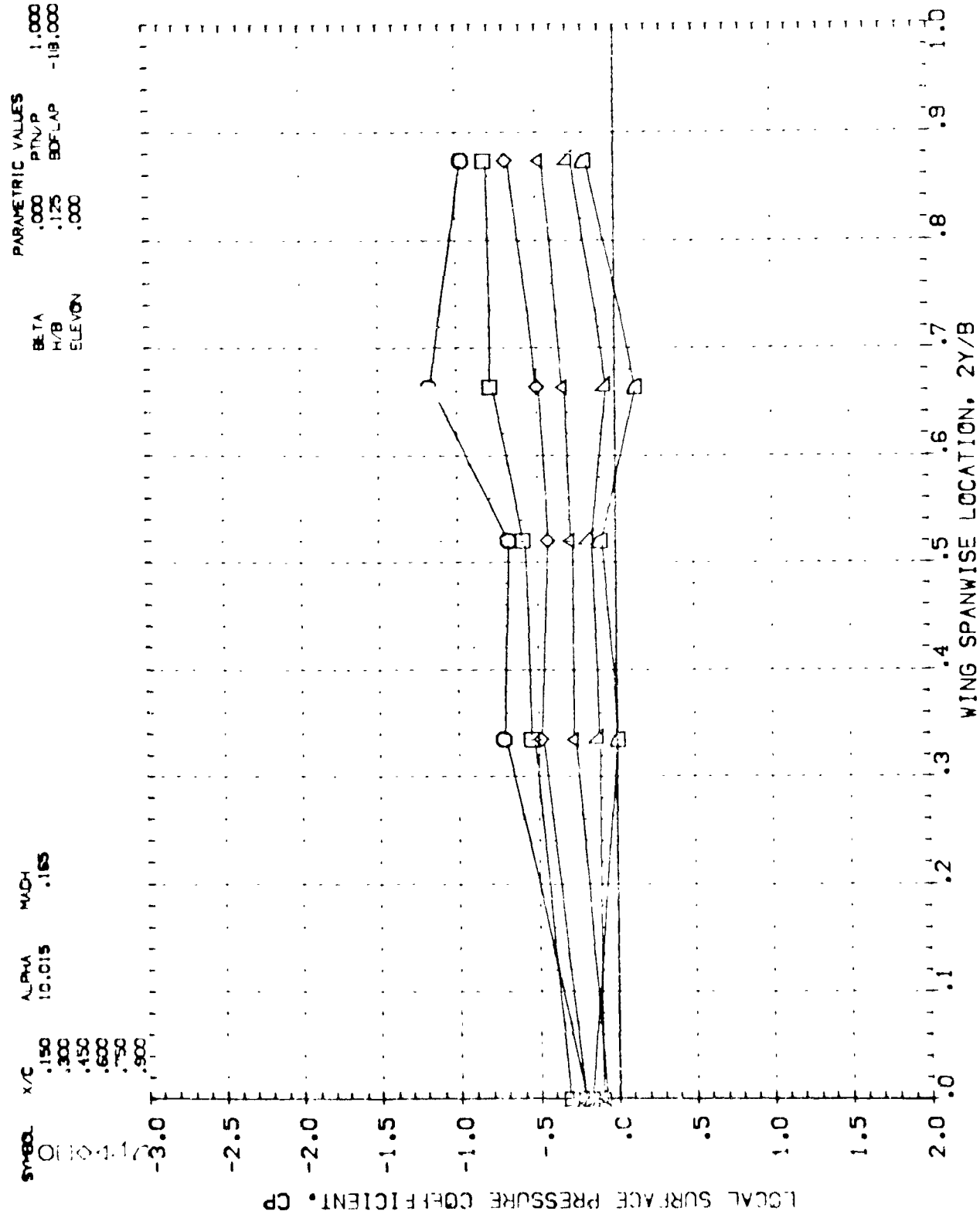


FIG 42 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B 8:6C5F1 J40 W87E18 WING UPPER SURFACE(RDVU15)

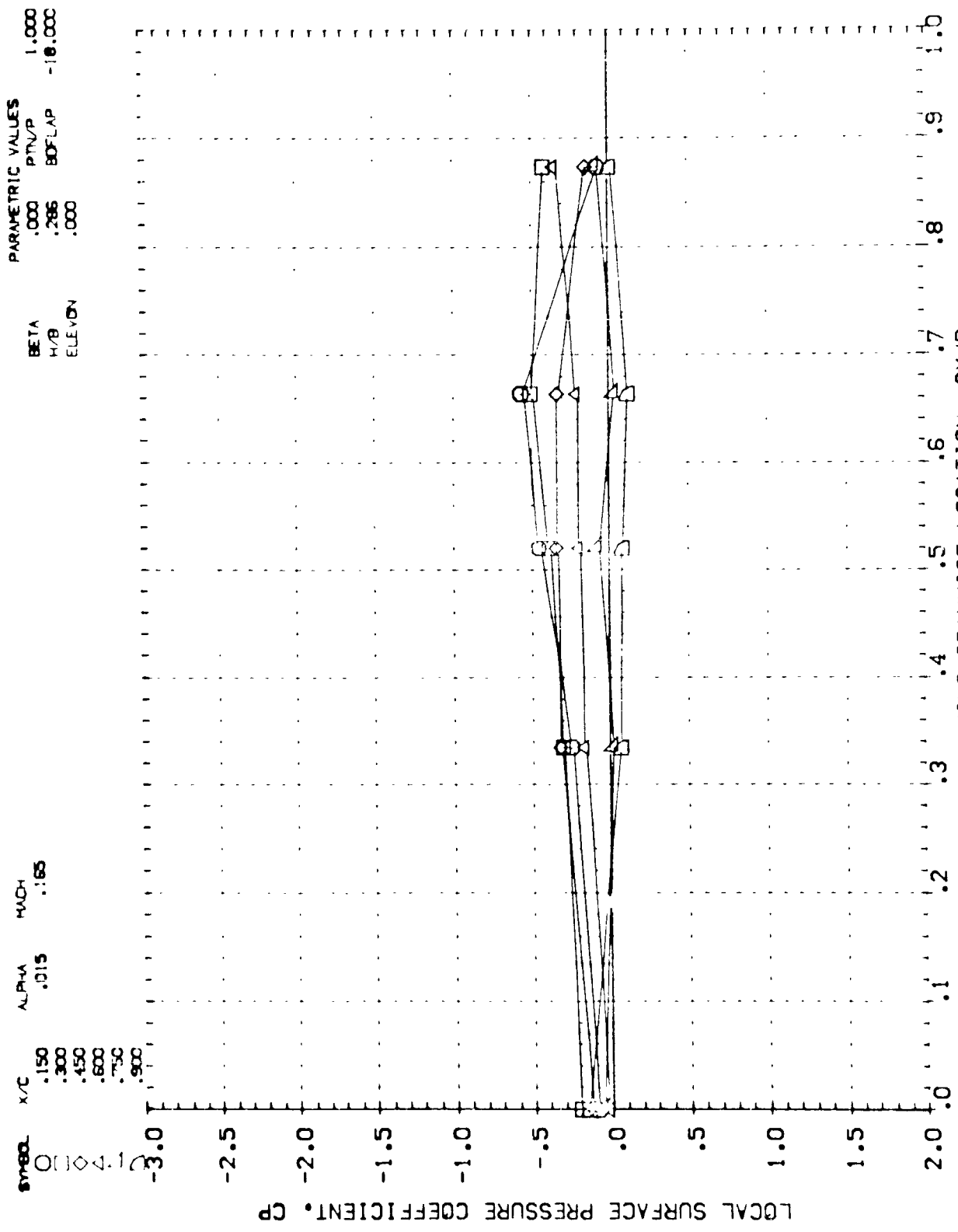


FIG 42 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU15)

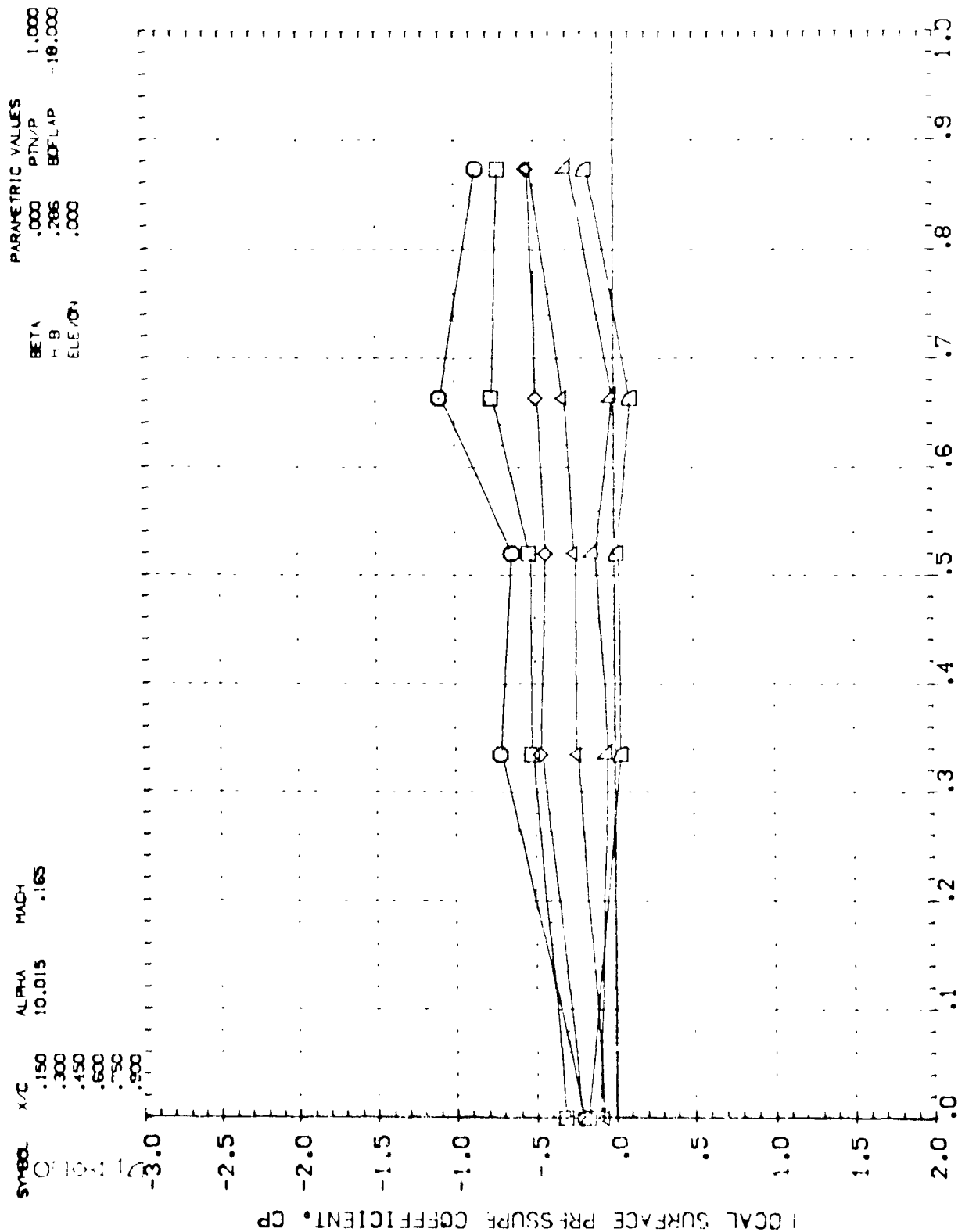


FIG 42 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 0 ELEV

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU04)

| | | | | | | | |
|--------|-----|-------|------|-------------------|--------|---------|--|
| Symbol | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | 1.300 | |
| | | | | H/B | BOFLAP | -18.000 | |
| | | | | ELEVON | .000 | | |

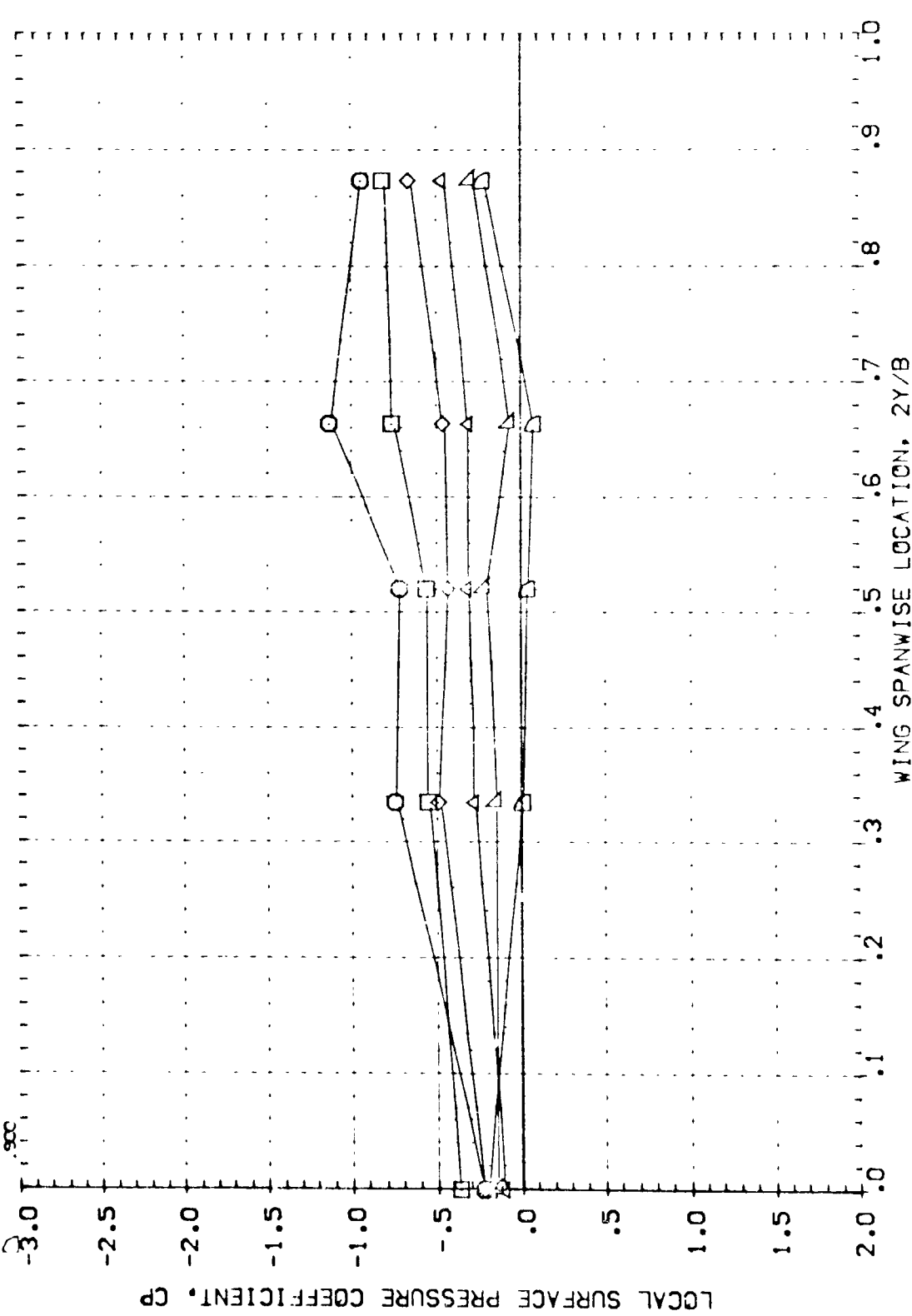


FIG 43 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU07)

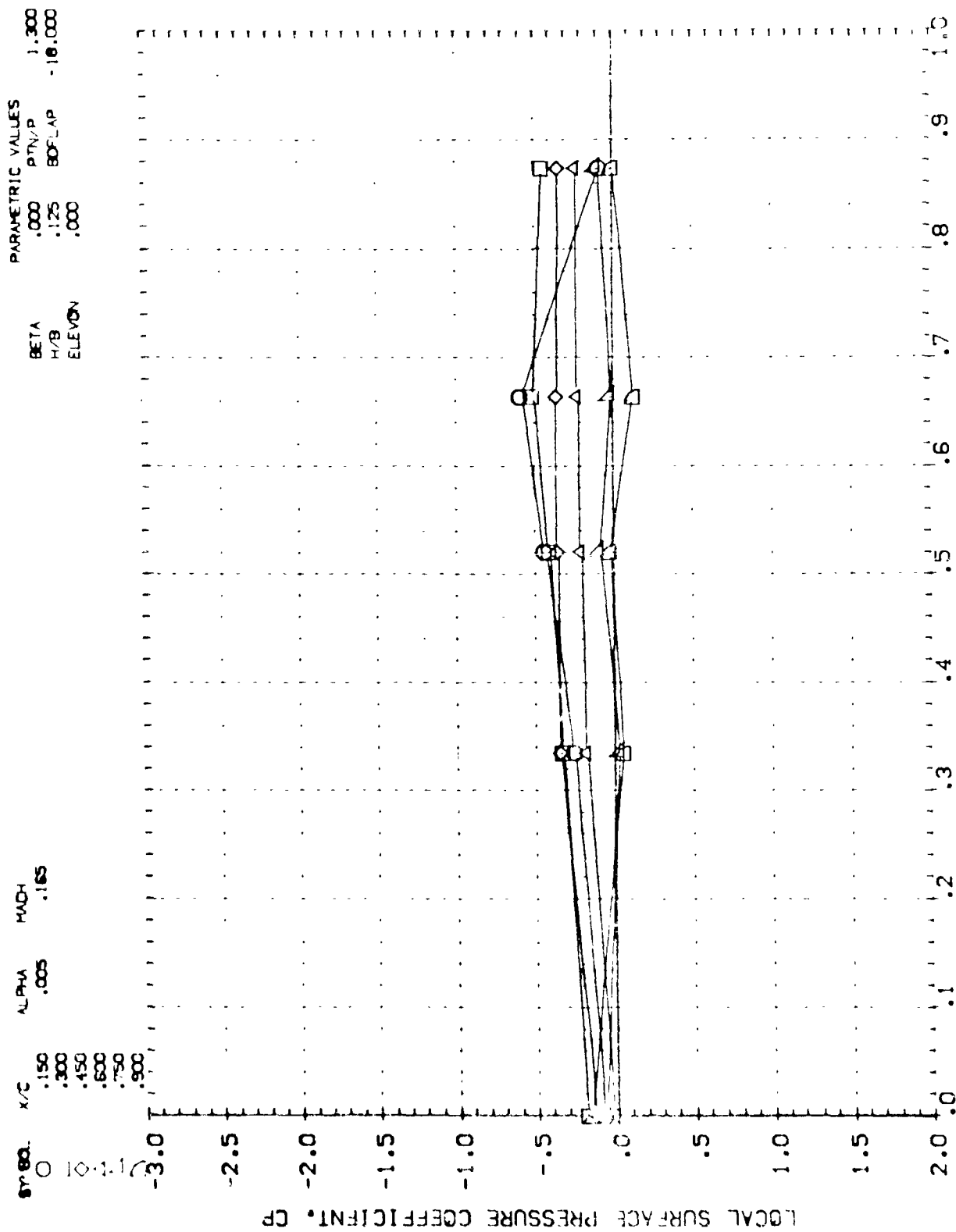
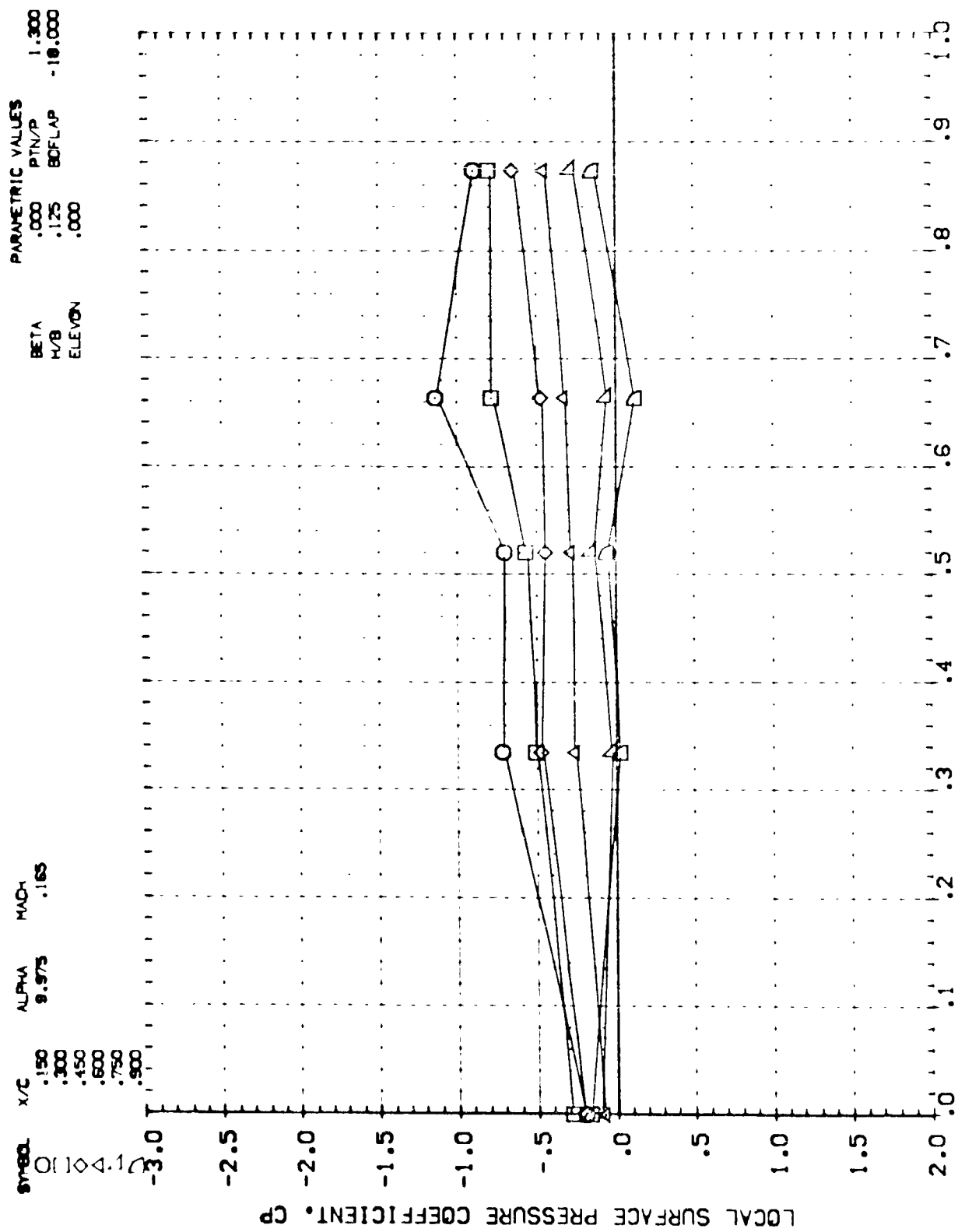


FIG 43 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU07)



WING SPANWISE LOCATION, 2Y/B

FIG 43 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

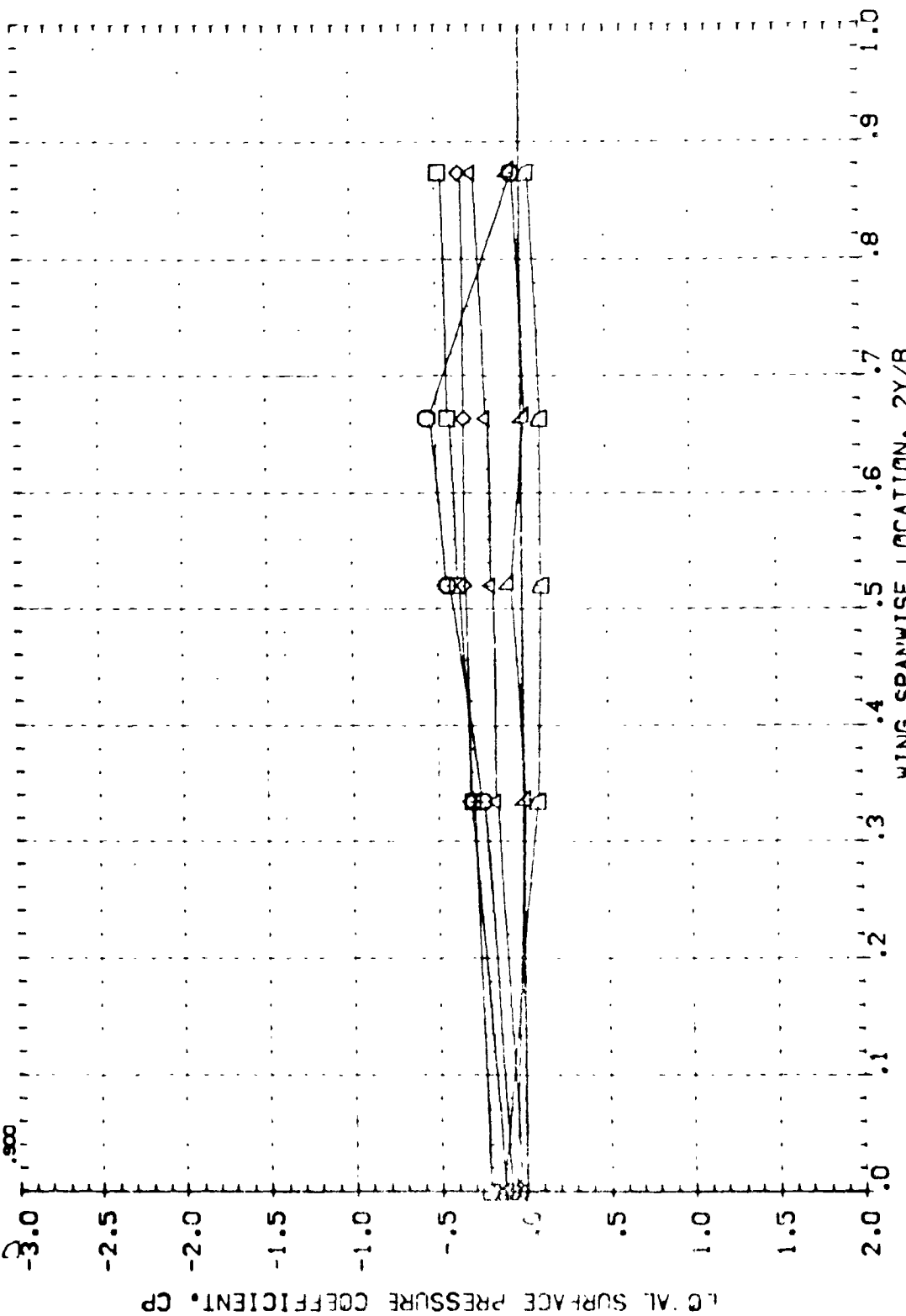
0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU17)

PARAMETRIC VALUES
 .000 PTN/P 1.300
 .286 BDFLAP -18.000
 .000

ALPHA .005
 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900

SYMBOL
 O
 X
 A
 D
 1



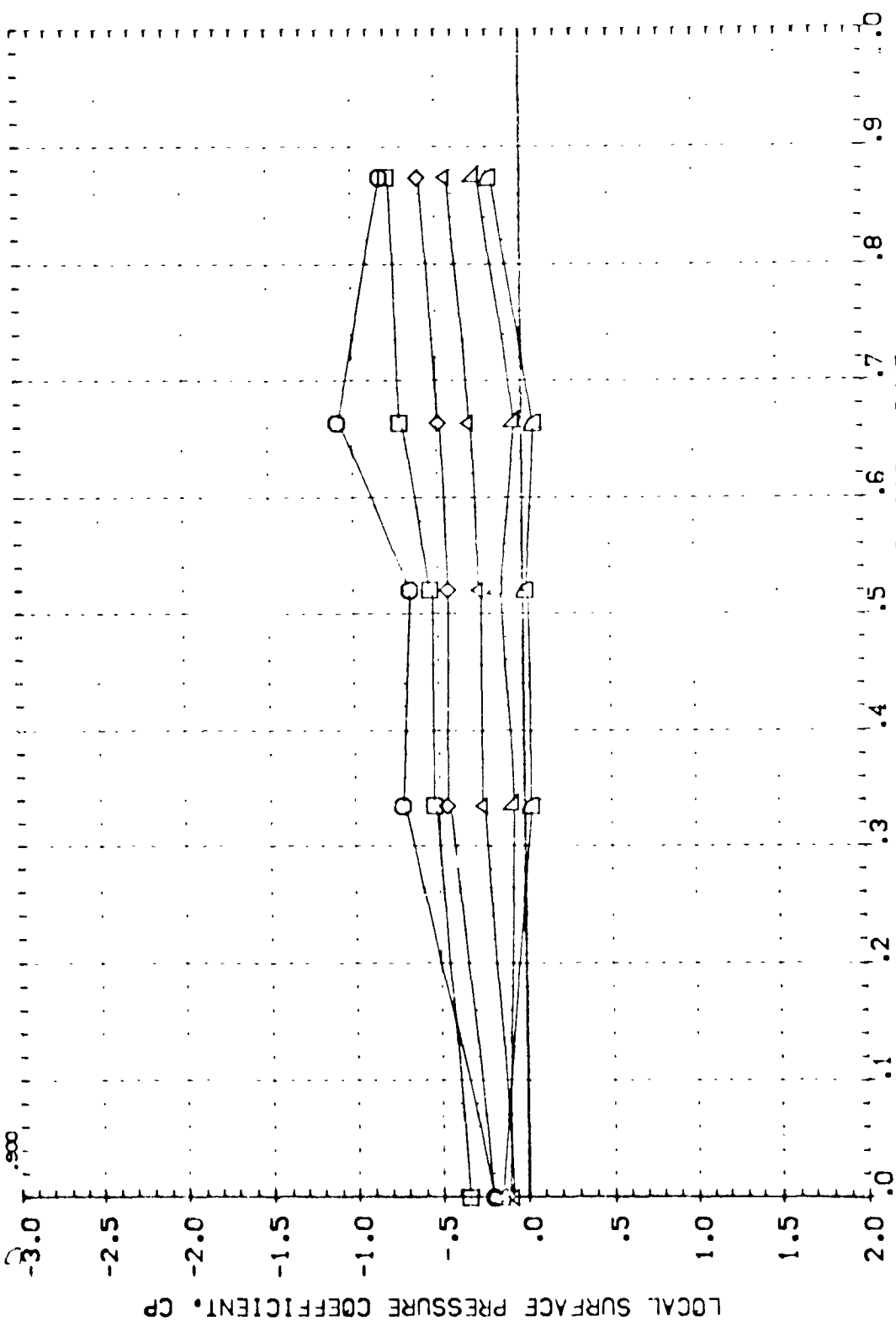
WING SPANWISE LOCATION, 2Y/B

FIG 43 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E:8 WING UPPER SURFACE (RDVU17)

PARAMETRIC VALUES
BETA .000 PTN/P 1.300
H/B .286 BDFLAP -19.000
ELEVON .000

SYMBOL X/C ALPHA MACH
.150 9.875 .165
.300
.450
.600
.750
.900



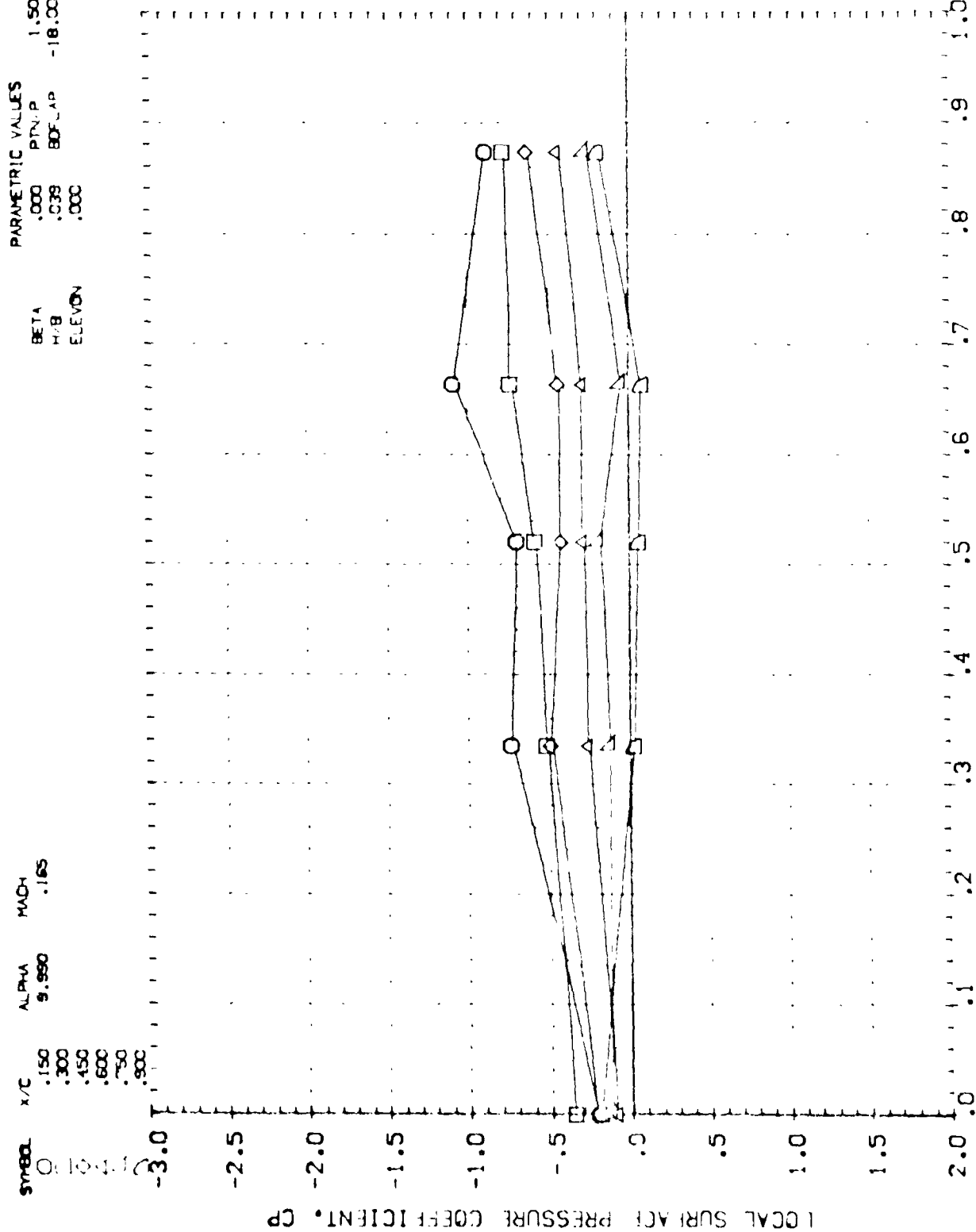
WING SPANWISE LOCATION, 2Y/B

FIG 43 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

0157-B B16C5F1 J40 J87E18 WING UPPER SURFACE (RDVU05)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .038 BDF/AP -18.000
 ELEVON .000

ALPHA 9.990
 MACH .165
 X/C .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, 2Y/B

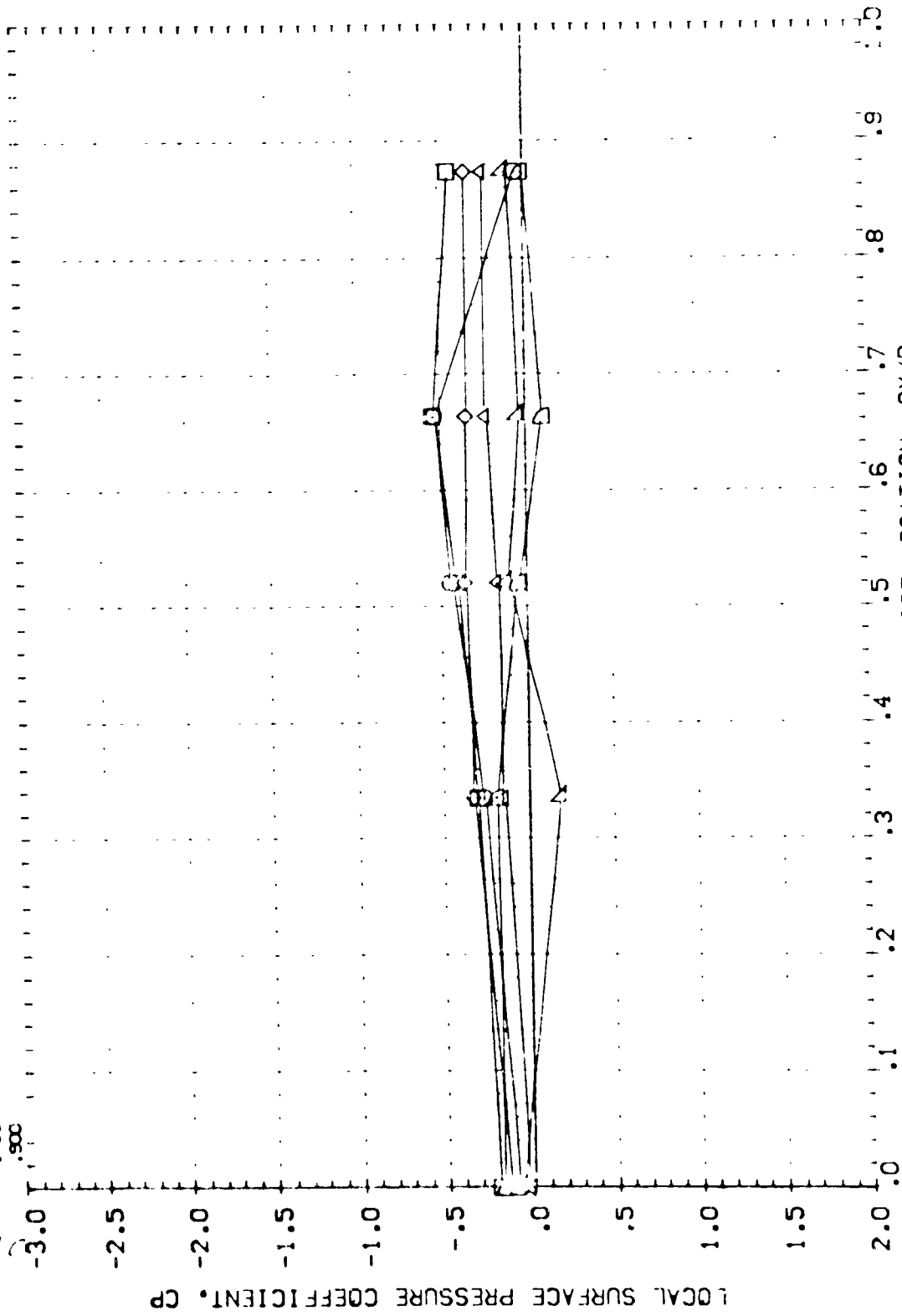
FIG 44 WING UPPER SURFACE PRESSURE SPANWISE DISR WITH J40, PTN/P=1.5, 0 ELEVON

0457-B 316C5F: J40 W87E18 WING UPPER SURFACE (RDVU08)

PARAMETRIC VALUES
 .000 PTN/P 1.500
 .125 BOFLAP -10.000
 .000 ELEVON

ALPHA .0300
 MACH .165

SYMBOL
 .150
 .300
 .450
 .600
 .750
 .900



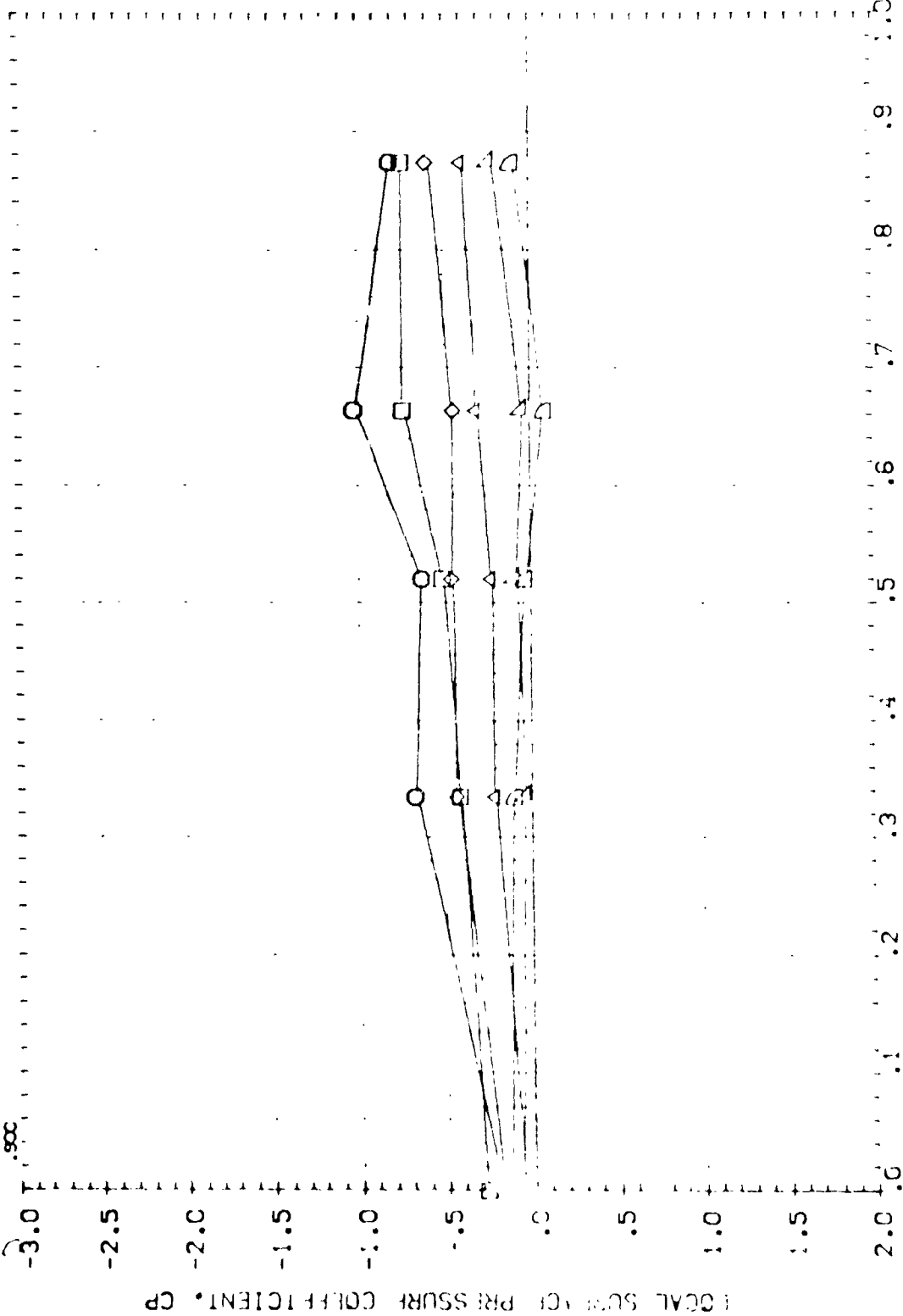
WING SPANWISE LOCATION, $2Y/B$

FIG 44 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH 040, PTN/P=1.5, 0 ELEVON

CAS-3 31605F: J40 #8"E:18 WING UPPER SURFACE (RD, J08)

PARAMETRIC VALUES
 BETA .000 PTN, P 1.500
 M B .125 BDF LAP -18.000
 ELEVEN .000

SYMBOL A/C ALPHA MAX
 .150 9.980 .155
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, ZY/B

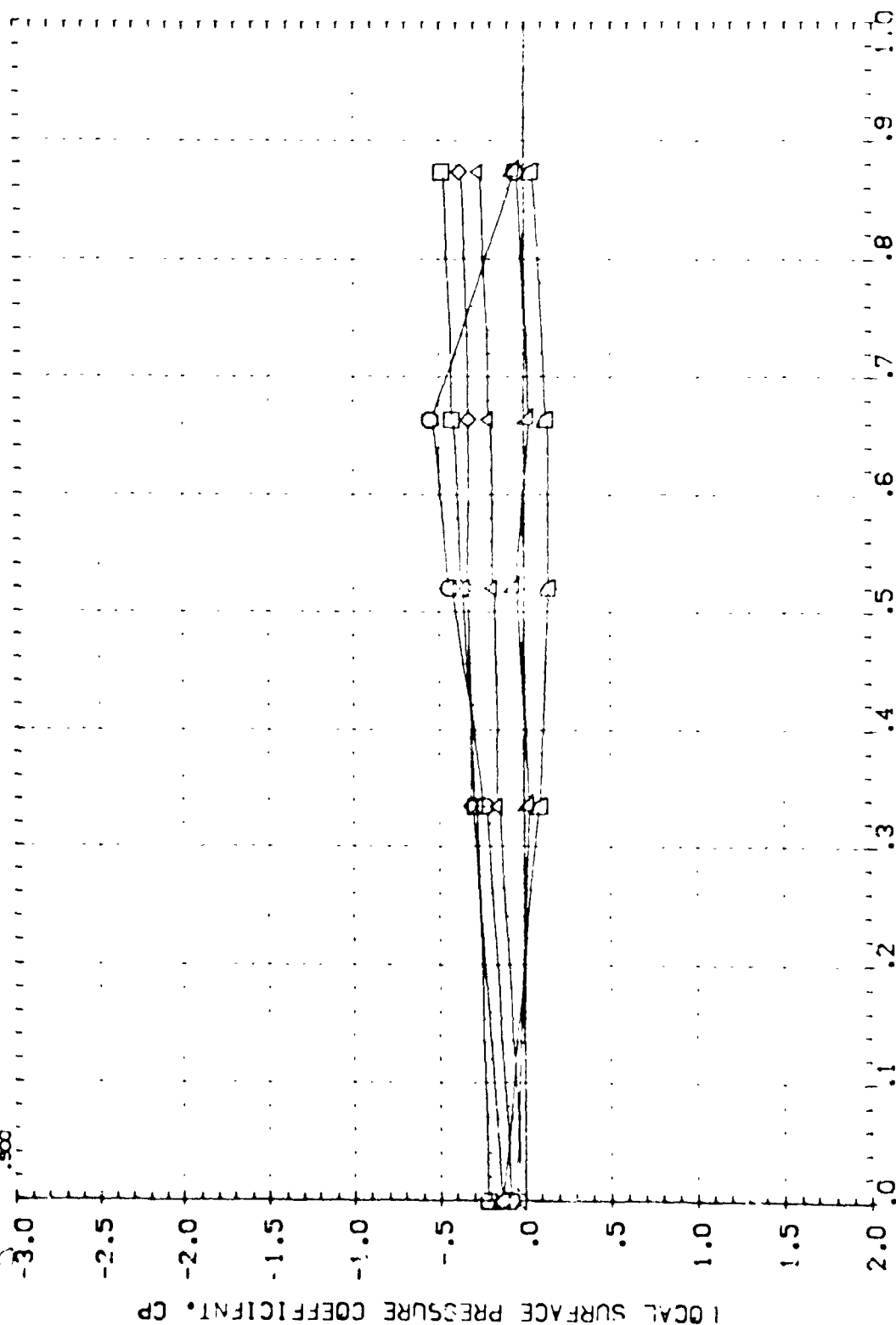
FIG 44 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.5, 0 ELEVEN

045-3 316CSE1 J40 #87E18 WING UPPER SURFACE (RDVU16)

PARAMETRIC VALUES
 BETA PTN/P 1.500
 M B BDF LAP -18.000
 ELEVON .000

ALPHA .015
 MACH .165

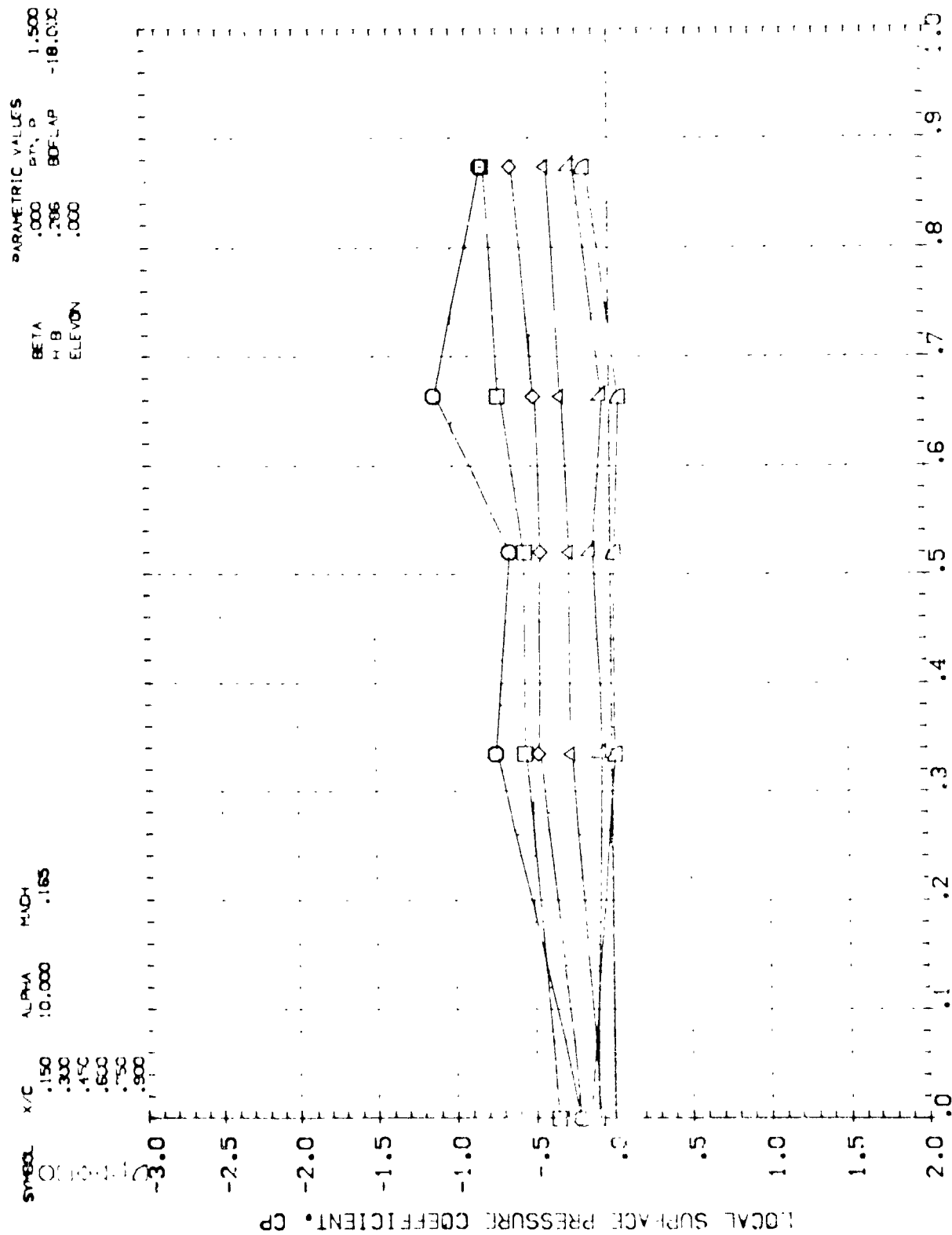
X/C
 .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, $2Y/B$

FIG 44 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.5, 0 ELEVON

0A57-B 916C5F1 J40 W87E18 WING UPPER SURFACE (RDVU16)

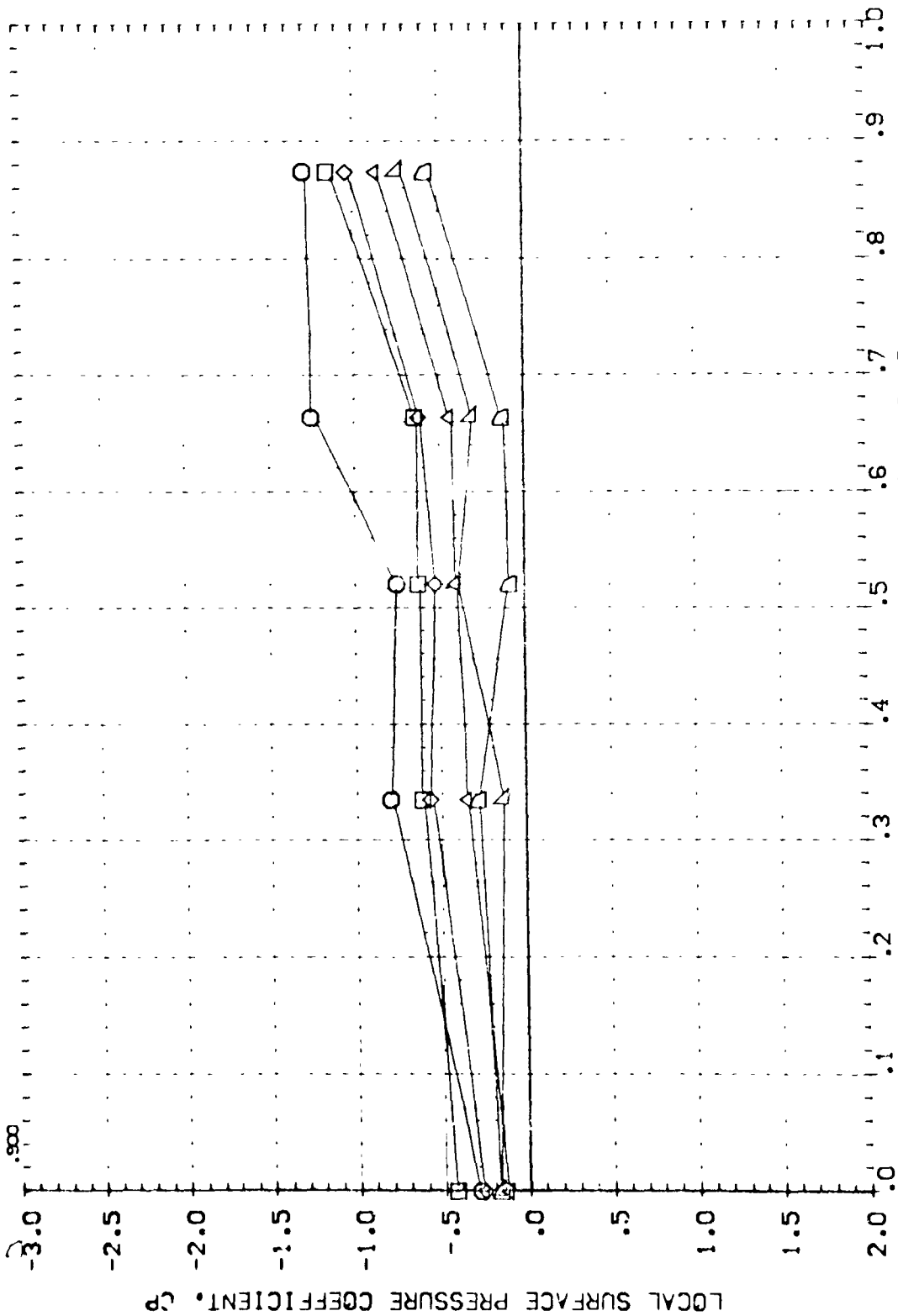


WING SPANWISE LOCATION, 2Y/B

FIG 44 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.5, C ELEVON

CASE-3 31605F1 J40 W87E18 WING UPPER SURFACE (RDVU33)

| SYMBOL | X/C | ALPHA | H ₂ O/H | PARAMETRIC VALUES |
|--------|------|--------|--------------------|-------------------|
| SYMBOL | .150 | 10.005 | .165 | BETA .000 |
| 0.000 | .300 | | | PTN/P |
| 0.000 | .450 | | | DOFLAP |
| | | | | ELEVOR |
| | | | | 15.000 |
| | | | | 1.000 |
| | | | | -10.000 |

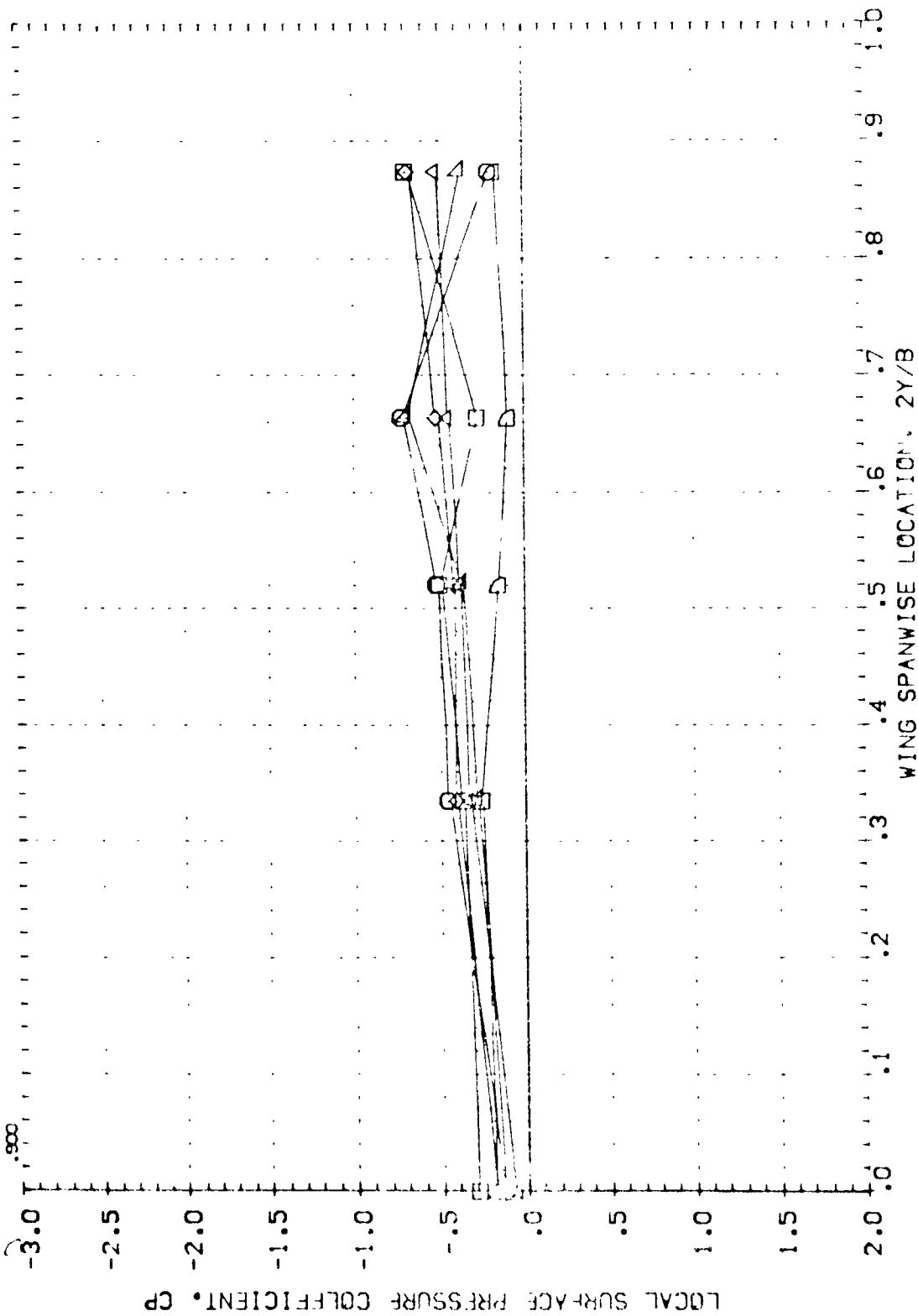


WING SPANWISE LOCATION, 2Y/B

FIG 45 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH ϕ_{40} , $PTN/P=1.0$, 15° ELEV.

0457-B B1603F1 J40 W87E18 WING UPPER SURFACE (RDVU30)

| | | | | | | | |
|--------|------|-------|------|--------|-------------------|-------|---------|
| SY 100 | X/C | ALPHA | MACH | BETA | PARAMETRIC VALUES | | |
| 1000 | .150 | -.020 | .165 | H/B | .000 | PTN/P | 1.000 |
| 2000 | .300 | | | ELEVON | .125 | BOF/P | -18.000 |
| 3000 | .450 | | | | .150 | | |
| 4000 | .600 | | | | | | |
| 5000 | .750 | | | | | | |
| 6000 | .900 | | | | | | |



WING SPANWISE LOCATION, 2Y/B

FIG 45 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 15 ELEVON

0457-B 8:605F1 J40 W87E18 WING UPPER SURFACE (RDVU30)

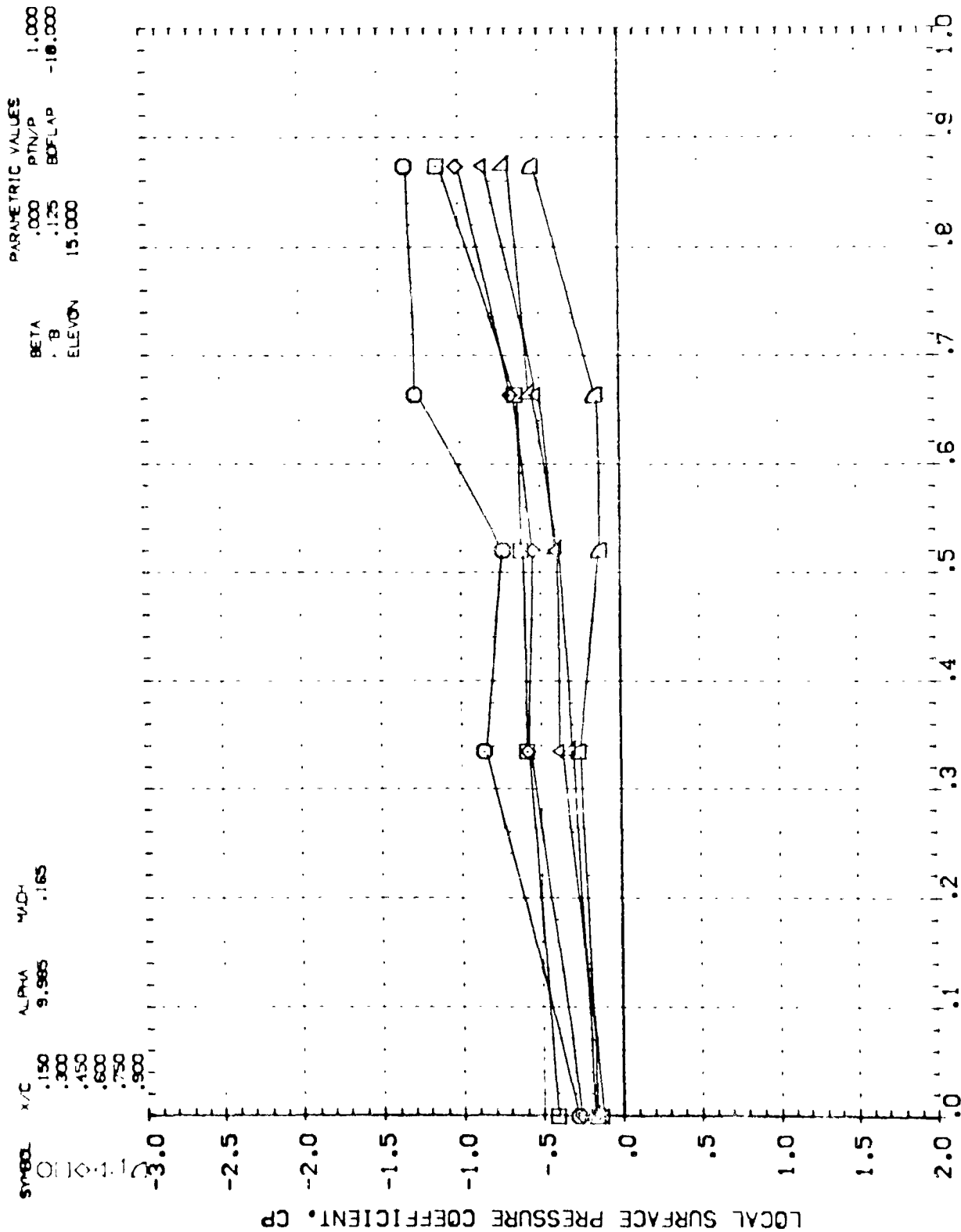


FIG 45 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU35)

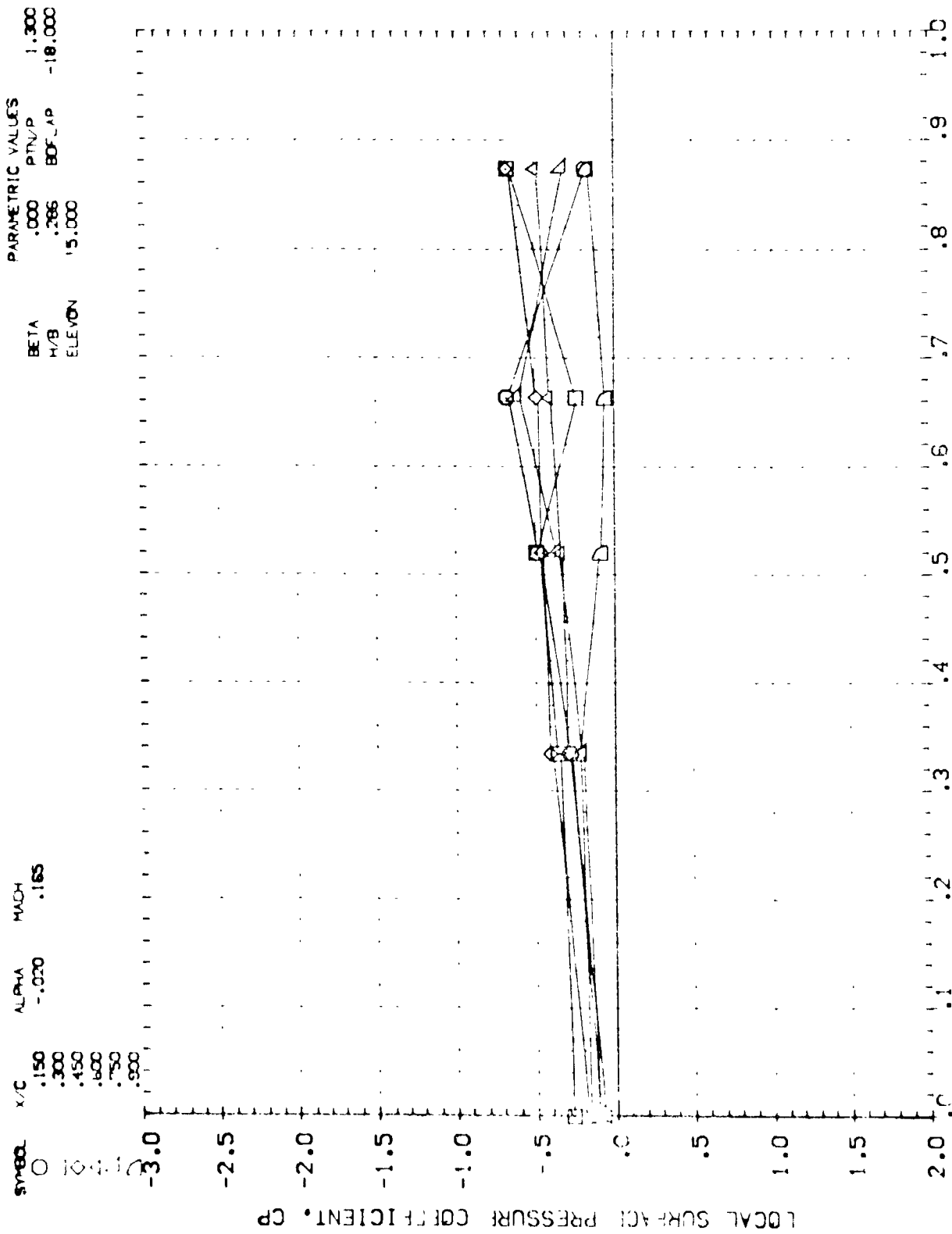


FIG 45 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.0,15 ELEVON

CAS7-3 316C5F1 J40 W87E18 WING UPPER SURFACE (RDVU35)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .286 BOFLAP -18.000
 ELEVON 15.000

ALPHA 9.985
 MACH .165

SYMBOL X/C
 .150
 .300
 .450
 .600
 .750
 .900

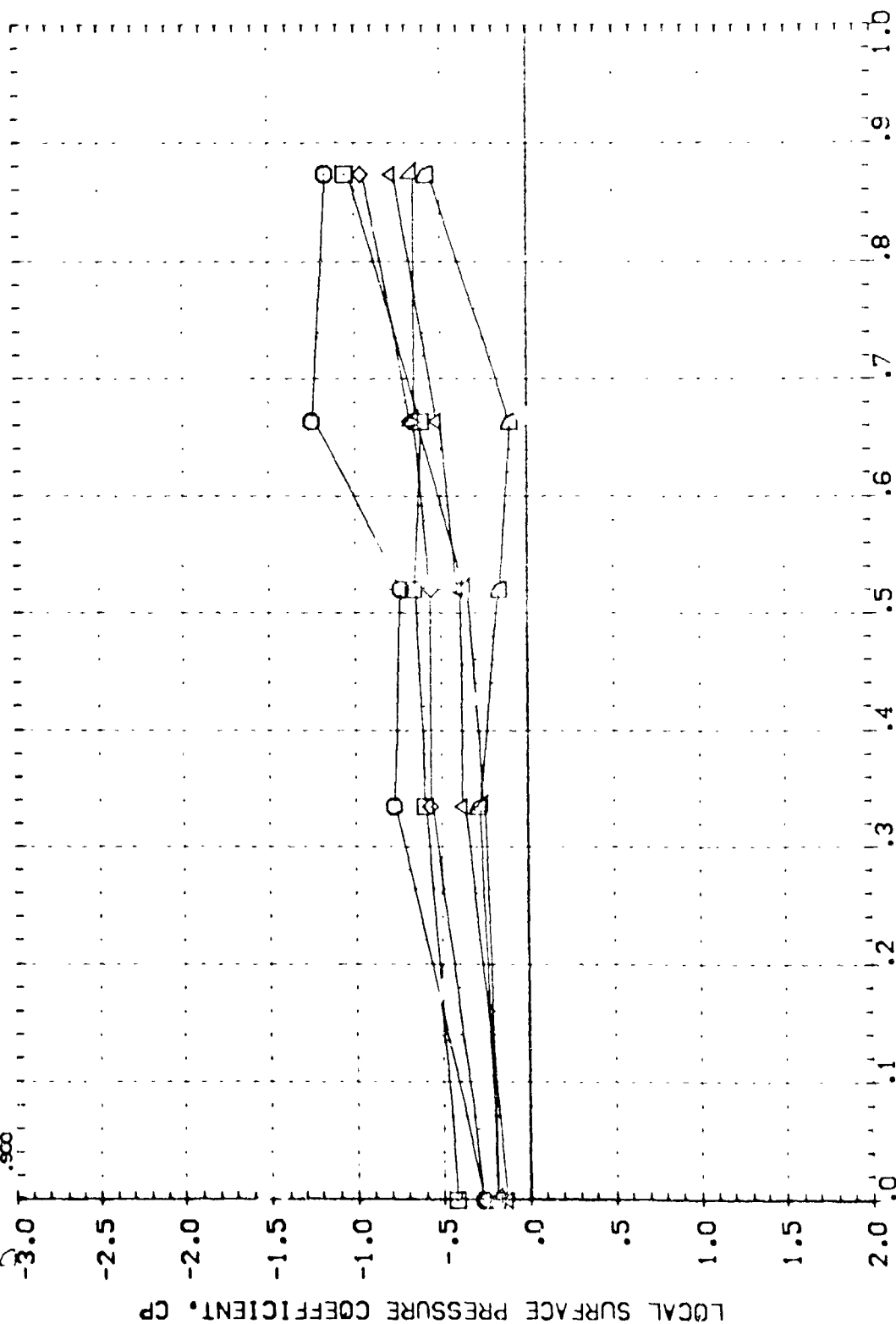


FIG 45 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.0, 15 DEGREE

GA57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU32)

| | | | | | | | |
|--------|------|-------|------|--------|-------|--------|---------|
| SYMBOL | X/C | ALPHA | MACH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .150 | 9.990 | .165 | H/B | .000 | 15.000 | 1.300 |
| □ | .300 | | | ELEVON | .039 | | -18.000 |
| △ | .450 | | | | | | |
| ◇ | .600 | | | | | | |
| ○ | .750 | | | | | | |
| ○ | .900 | | | | | | |

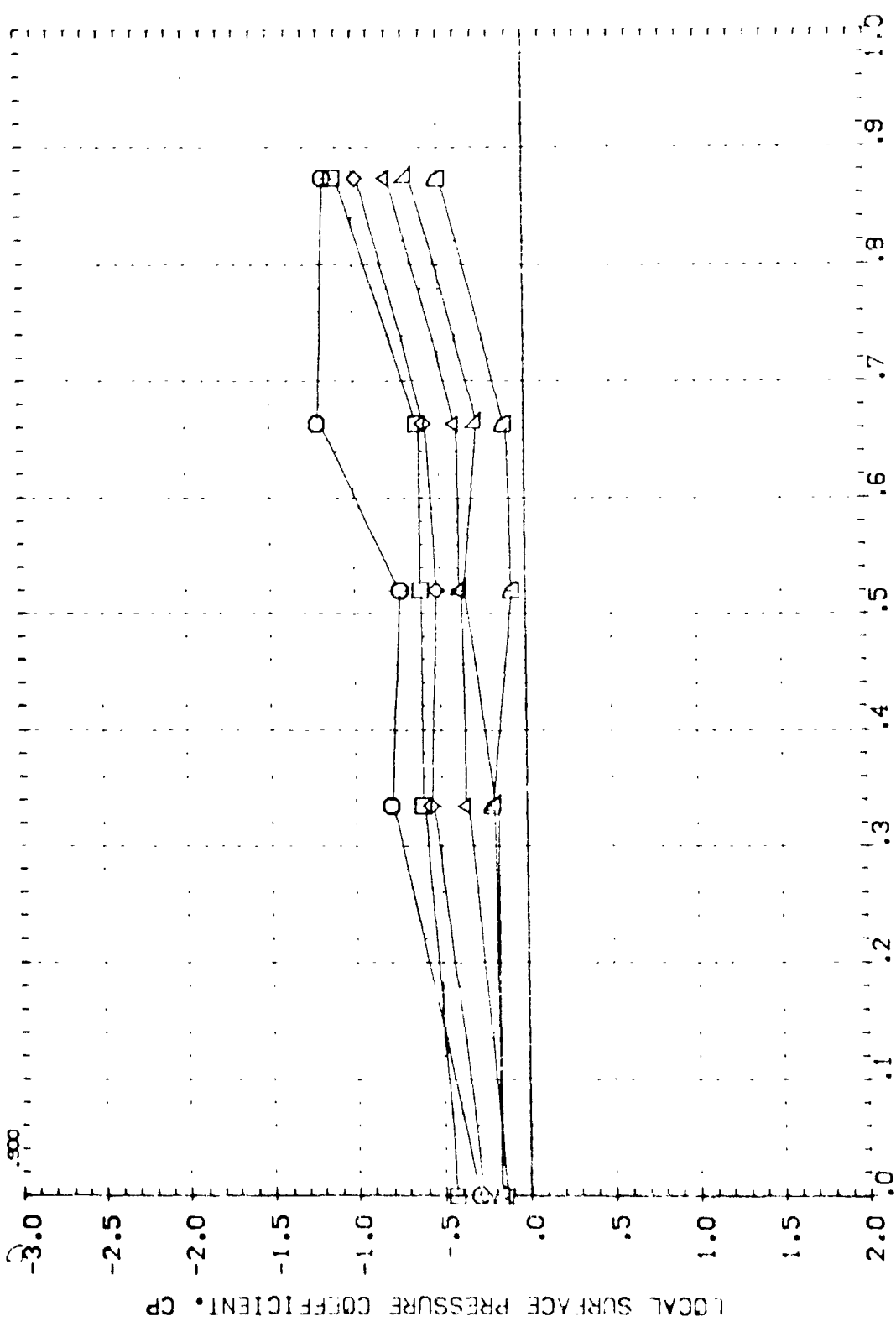
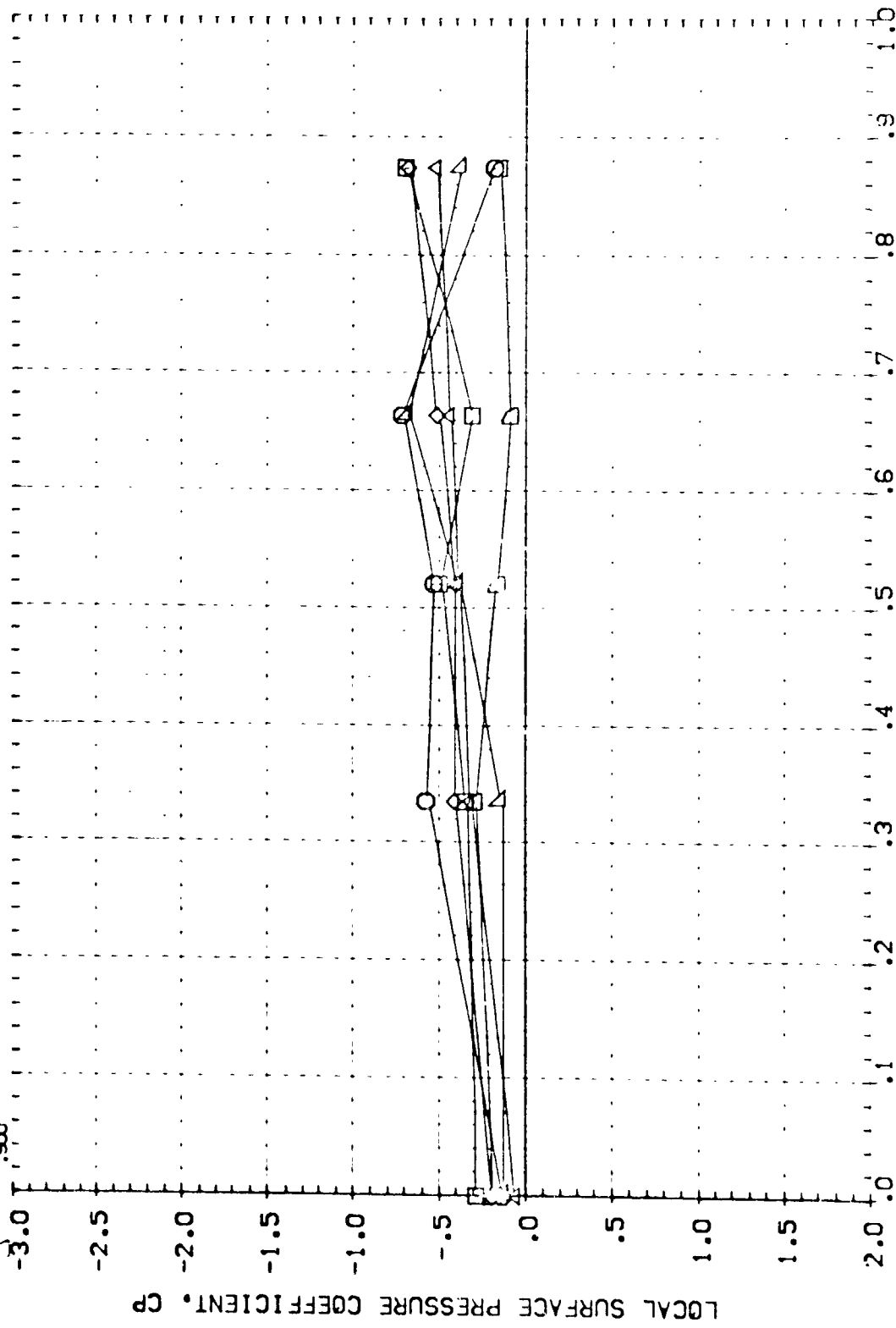


FIG 46 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 15 ELEVON

045--B B16CSF1 J40 W87E18 WING UPPER SURFACE (RDVU29)

| | | | | | | | | | |
|--------|-----|-------|------|-------------------|-------|--------------------|--------|--------|-------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | | | |
| | | | | BETA H/B | PTN/P | BOFLA ² | ELEVON | | |
| | | | | | | | | 15,000 | 1,300 |
| | | | | | | | | | |
| | | | | | | | | | |



WING SPANWISE LOCATION, 2Y/B

FIG 46 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 15 ELEVON

CA57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU29)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BDFLAP -18.000
 ELEVON 15.000

SYMBOL X/C ALPHA MACH
 O .150 9.965 .165
 □ .300
 △ .450
 ◇ .600
 ▲ .750
 ▽ .900

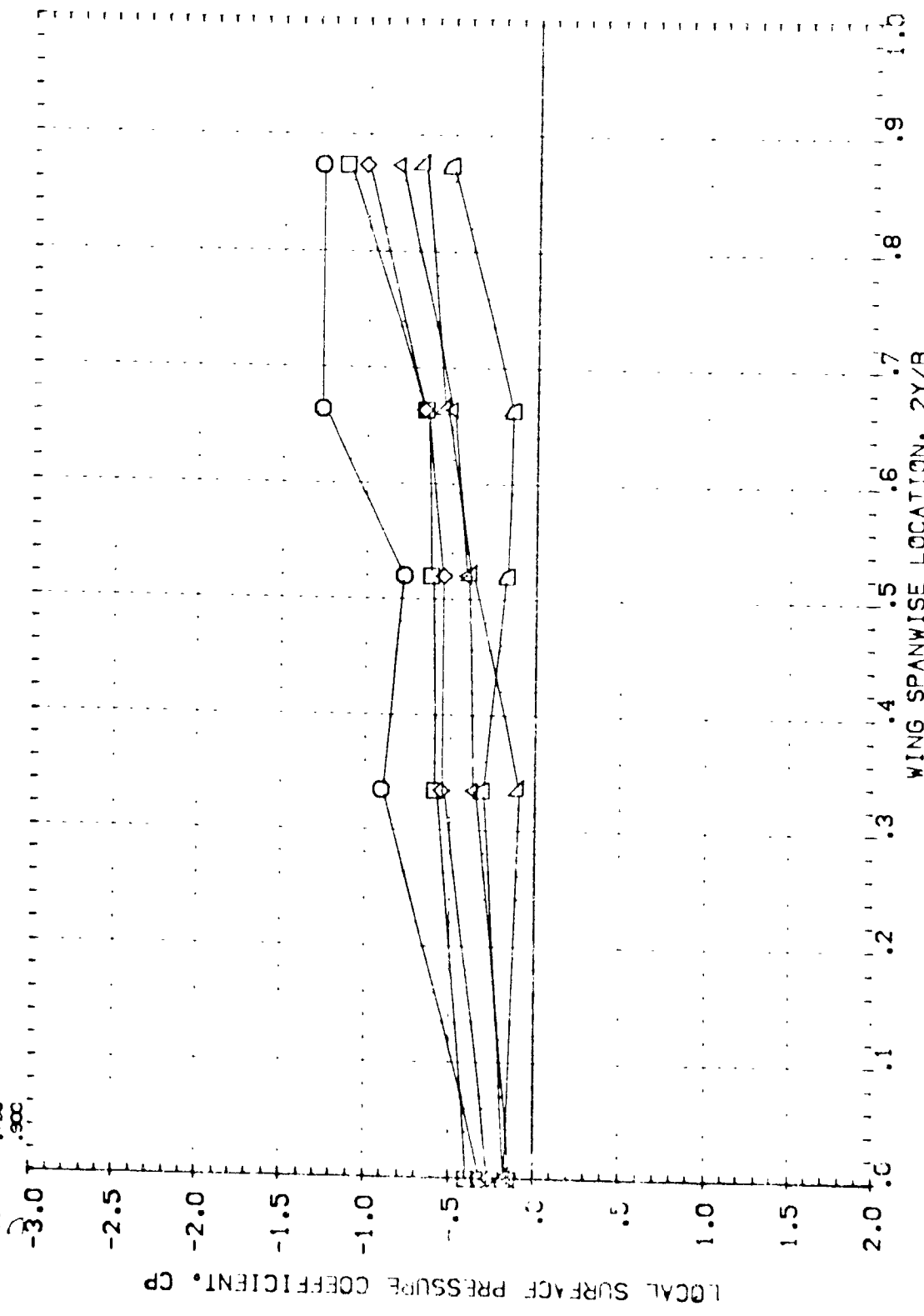


FIG 46 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 15 ELEVON

CAS7-B B16C5F: J40 W87E18 WING UPPER SURFACE (RDVU35)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .286 BDFLAP -18.000
 ELEVON 15.000

ALPHA -1.020
 HADH .165

X/C .150
 .300
 .450
 .600
 .750
 .900

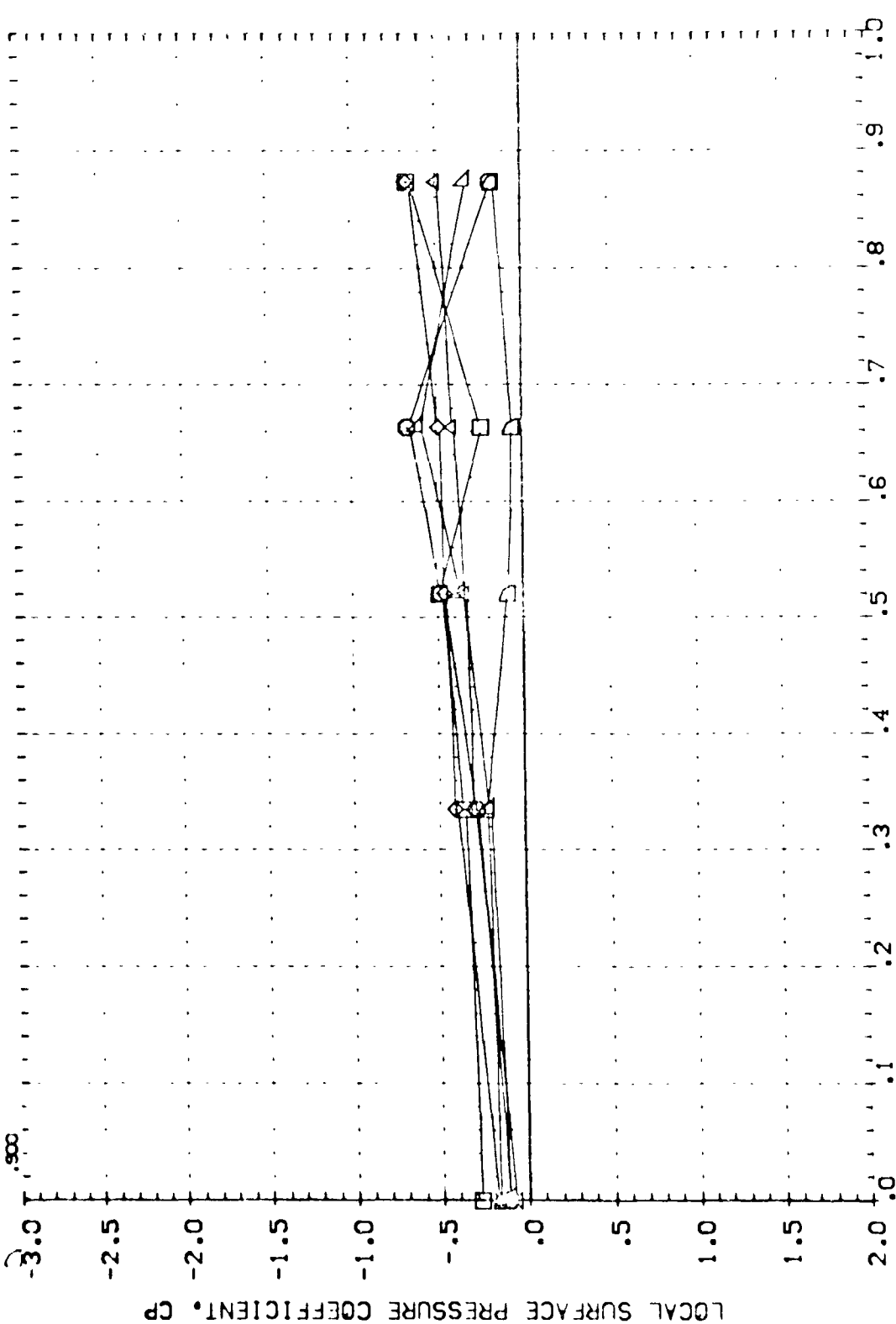


FIG 46 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.3, 15 ELEVON

CAS-3 B1605F1 J40 W87E18 WING UPPER SURFACE (RD, U35)

| PARAMETRIC VALUES | |
|-------------------|---------|
| ALPHA | 9.985 |
| MACH | .165 |
| BETA | 15.000 |
| H/B | .286 |
| ELEVON | 15.000 |
| PTN P | 1.300 |
| 90° LAP | -18.000 |

SYMBOL X/C

| | |
|---|------|
| ○ | .150 |
| ○ | .300 |
| ○ | .450 |
| ○ | .600 |
| ○ | .750 |
| ○ | .900 |

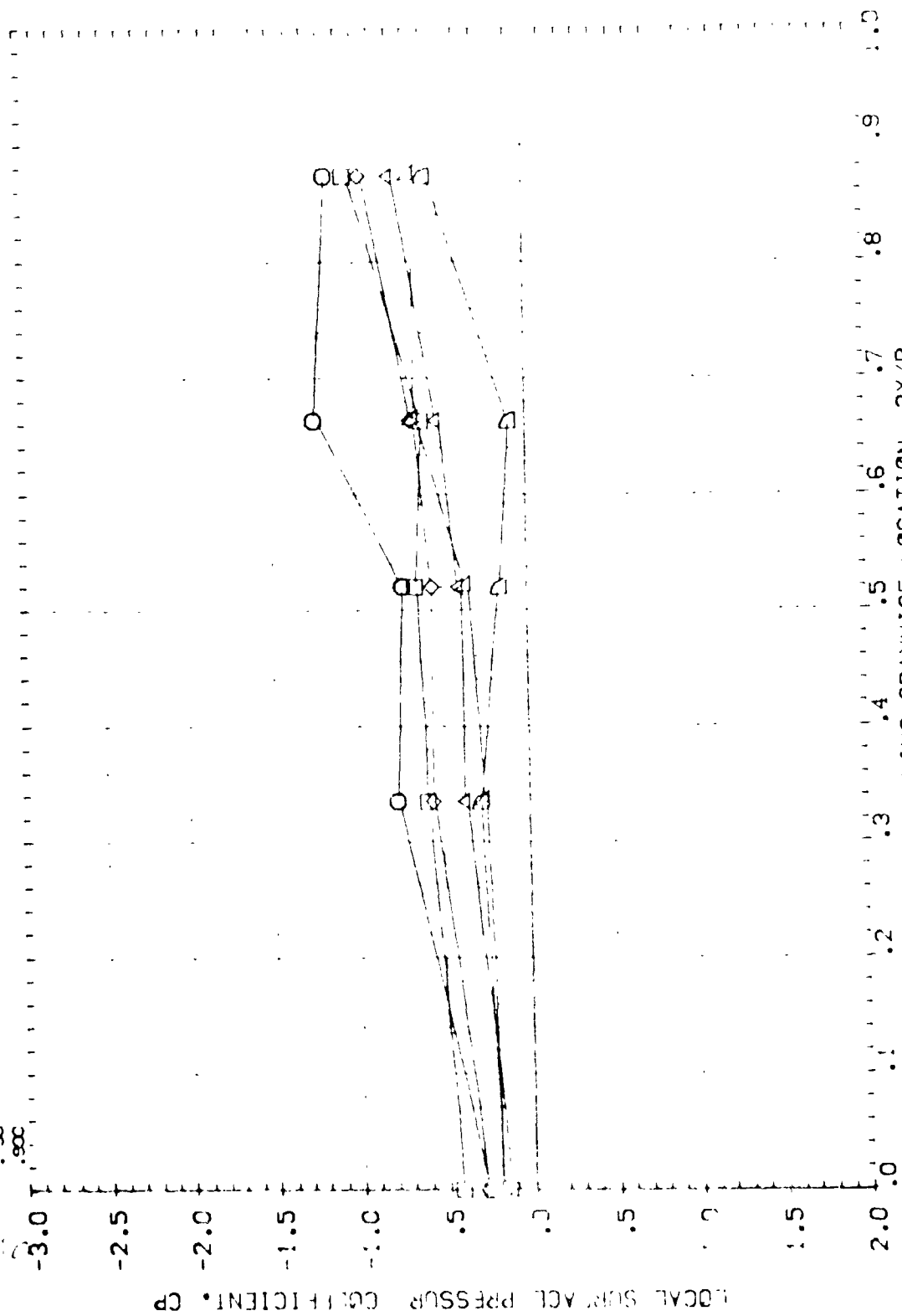


FIG 46 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN P=1.3, 15 ELEVON

QAS-3 B16CSE J40 W8TE18 WING UPPER SURFACE (RDVU31)

| SYMBOL | X C | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|--------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTN/D | BOFLAP | ELEVON |
| ○ | .150 | 10.010 | .105 | | .000 | | 1.500 |
| ○ | .300 | | | | .039 | | -18.000 |
| ○ | .450 | | | | | | |
| ○ | .600 | | | | | | |
| ○ | .750 | | | | | | |
| ○ | .900 | | | | | | |

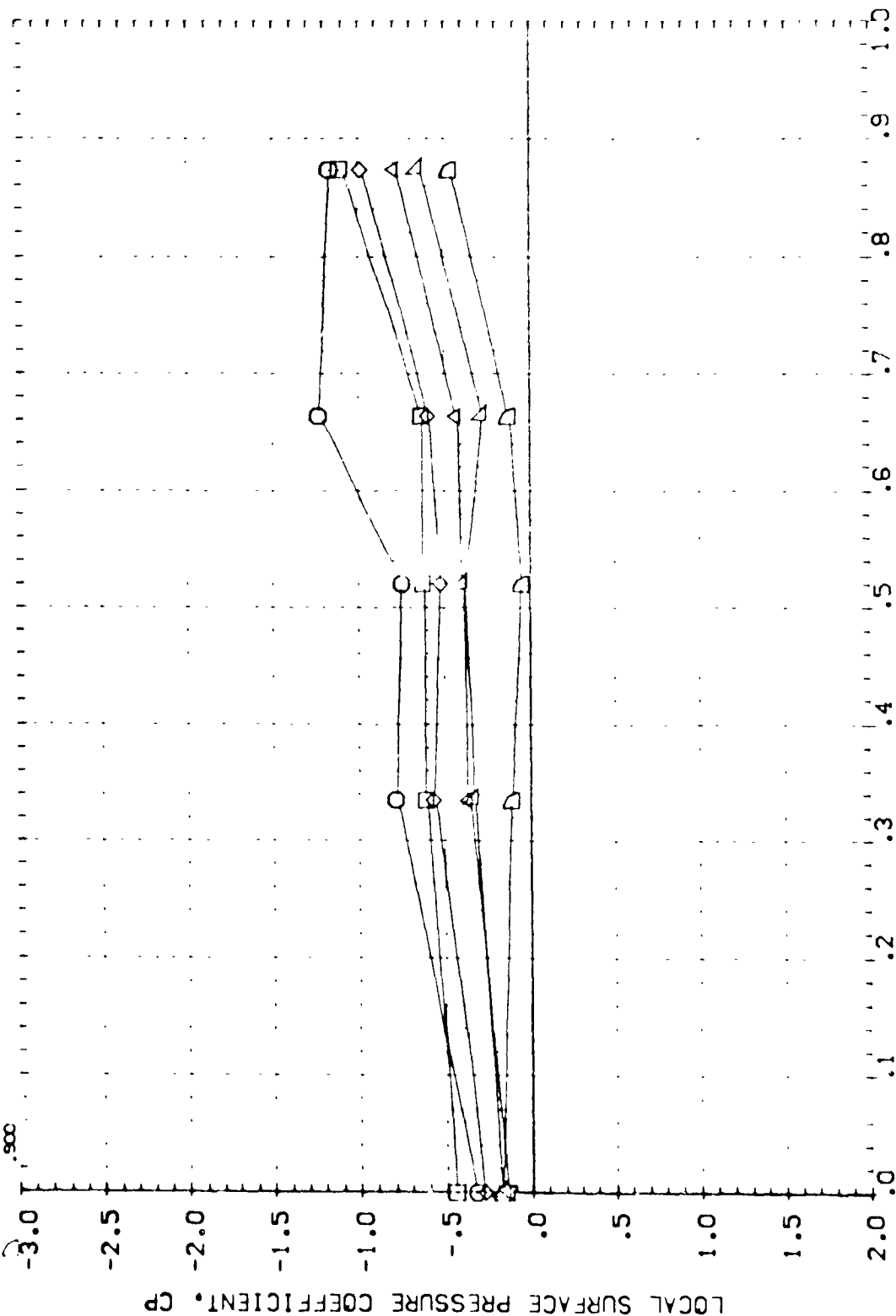


FIG 47 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH 140, PTN/P=1.5, 15 ELEVON

0457-B B1605F1 J40 W87E18 WING UPPER SURFACE (RD, J28)

| | | | | | | | |
|--------|-----|-------|------|-------------------|--------|---------|-------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | | PTA, P | |
| | | | | H/B | BOFLAP | 15,000 | 1,500 |
| | | | | ELEVOR | 15,000 | -18,000 | |

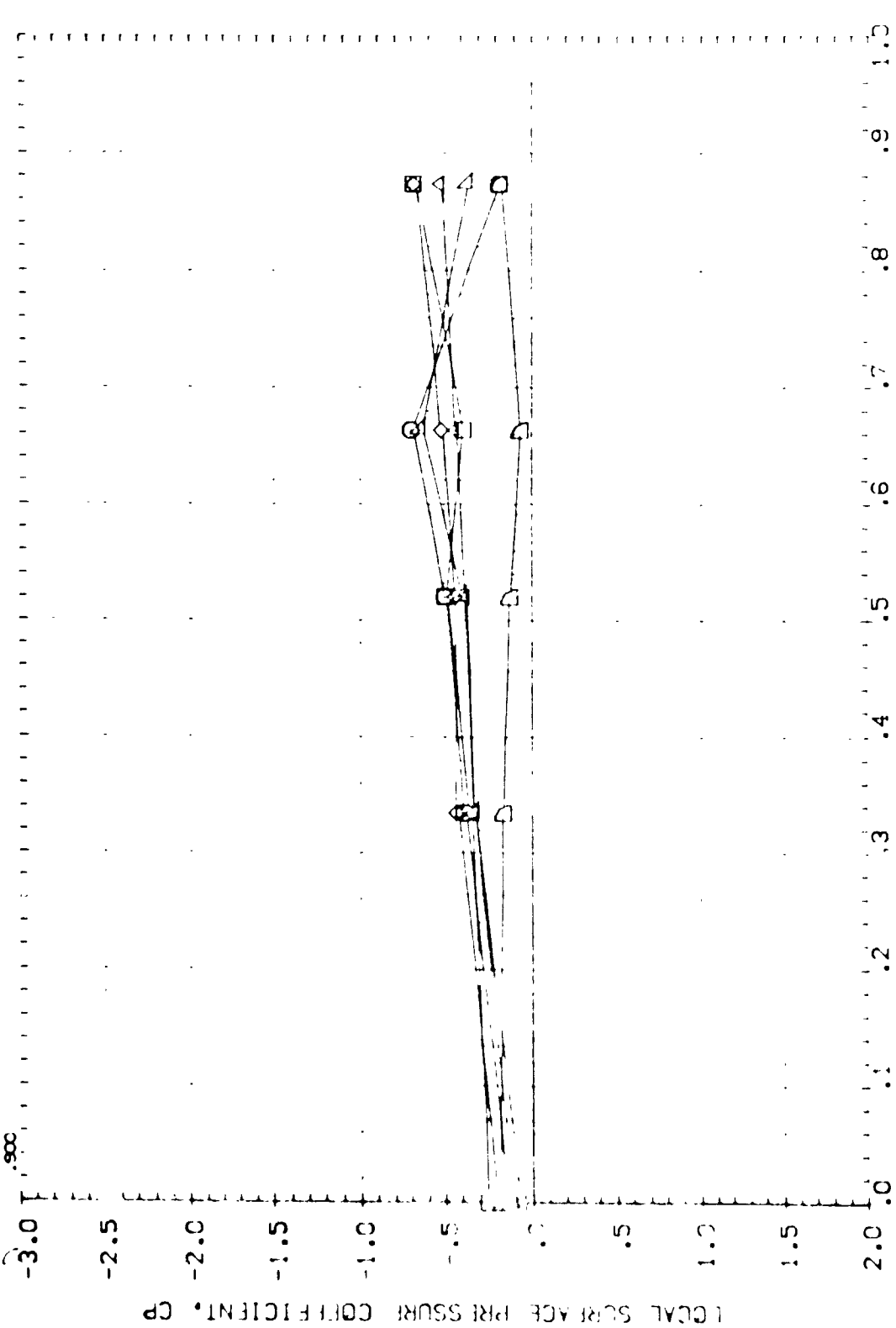


FIG 47 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTA, P=15,15 ELEVOR
WING SPANWISE LOCATION, 2Y/B
PAGE 208

0457-3 31605F1 J40 W87E18 WING UPPER SURFACE (RDVU28)

| | | | | | | | |
|--------|-----|-------|------|-------------------|-------|---------|--|
| SYMBOL | M/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | 1.500 | |
| | | | | W/B | .000 | -18.000 | |
| | | | | ELEVON | .125 | 15.000 | |

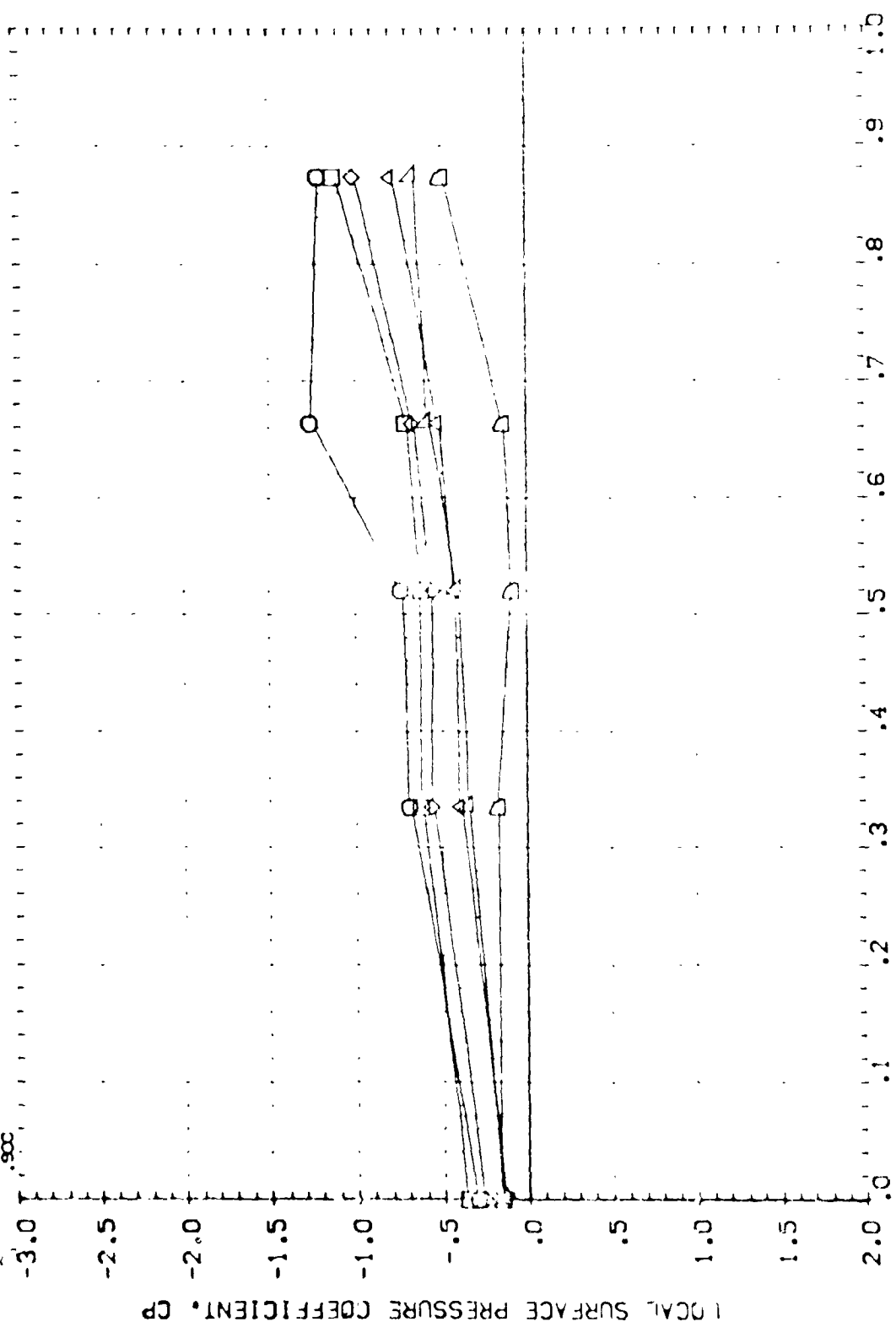
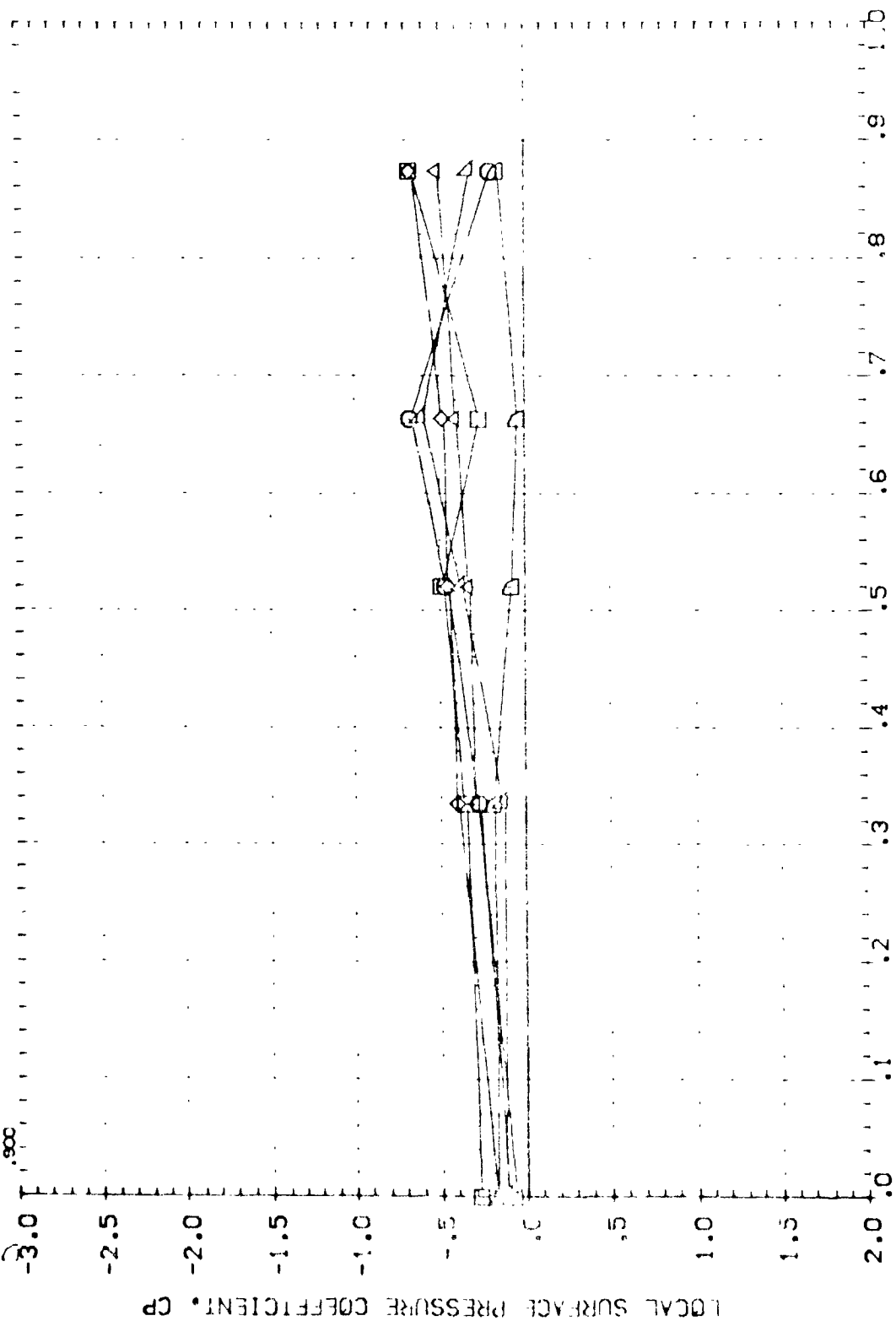


FIG 47 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.5, 15.000, WING SPANWISE LOCATION, 2Y/B

0457-B 316C5F: J40 W87E18 WING UPPER SURFACE (RDVU34)

| | | | | | |
|--------|------|--------|------|--------|-------------------|
| SYMBOL | X/C | ALPHA | MACH | BETA | PARAMETRIC VA LFS |
| 0 | .150 | -0.010 | .165 | M/B | .000 PTN/P |
| 1 | .300 | | | ELEVON | .286 BDFLAP |
| 2 | .450 | | | | 15.000 |
| 3 | .600 | | | | |
| 4 | .750 | | | | |
| 5 | .900 | | | | |



WING SPANWISE LOCATION, 2Y/B

FIG 47 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.5, 1.5 ELEVON

0A57-B 816C5F1 J40 W87E18 WING UPPER SURFACE (RDVU34)

| | | | | | | | |
|--------|------|-------|------|-------------------|-------|--------|---------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | BDLAP | ELEVON |
| | .150 | 9.995 | .165 | | .000 | 15.000 | 1.500 |
| | .300 | | | H/B | .286 | | -18.000 |
| | .450 | | | ELEVON | | | |
| | .600 | | | | | | |
| | .750 | | | | | | |
| | .900 | | | | | | |

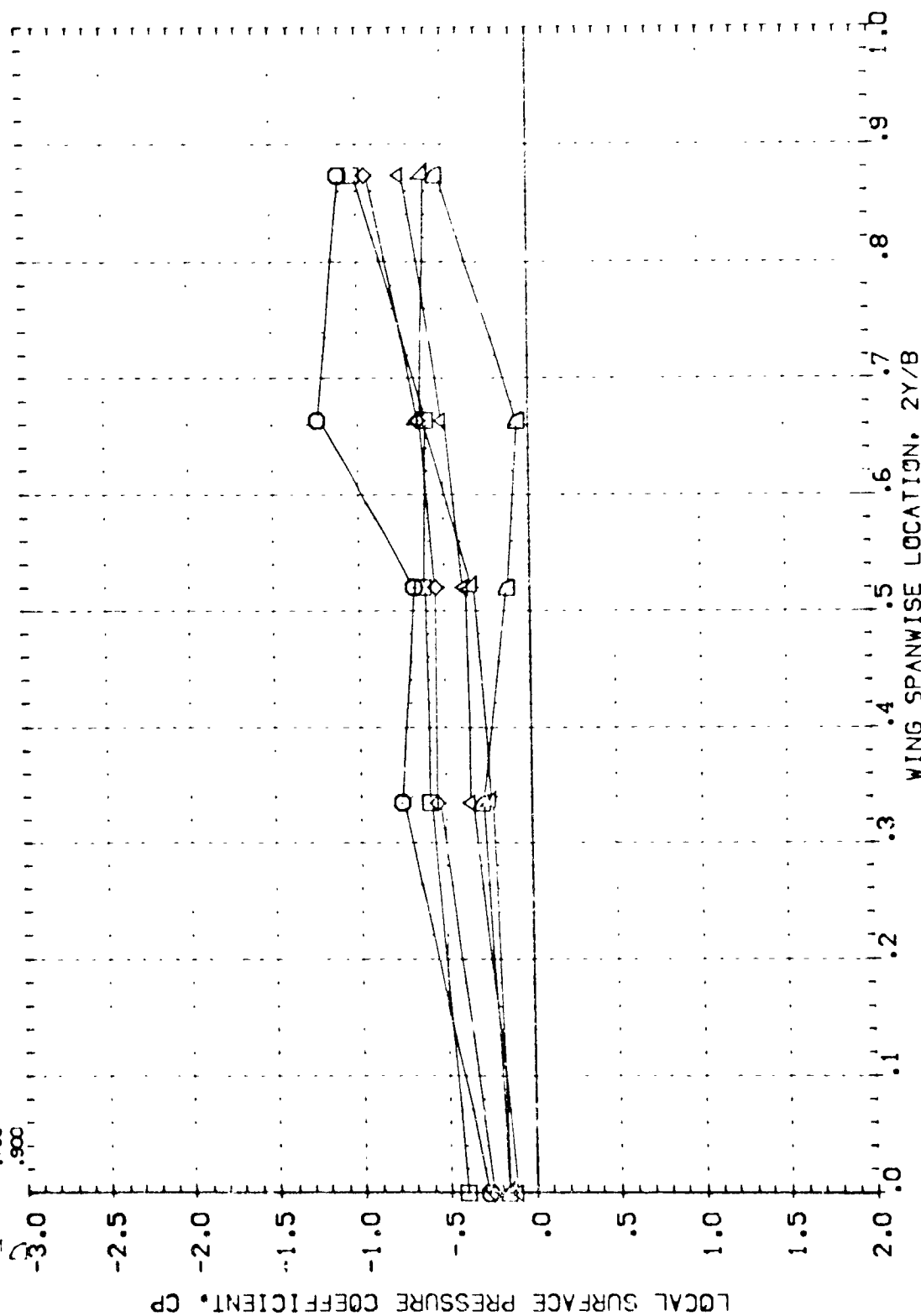


FIG 47 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.5, 15 ELEVON

| | PARAMETRIC VALUES | |
|-------|-------------------|----------|
| BETA | .000 | PTN/P |
| H/B | .039 | BOFLAP |
| NOA37 | .000 | ELEVON |
| | | 1.000 |
| | | --18.000 |

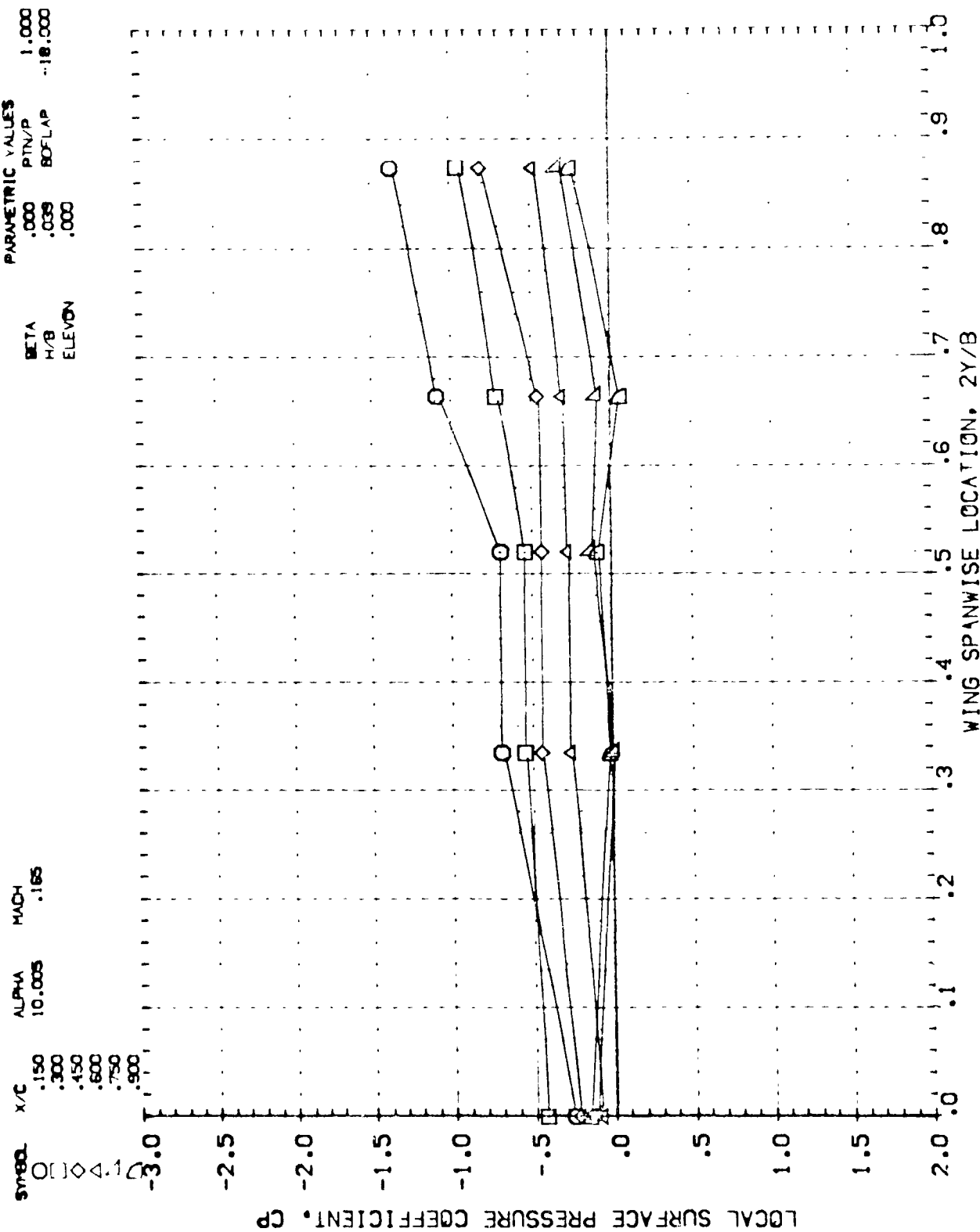


FIG 48 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.0, 0 ELEVEN

0457-B B16C5F: J41 W87E18 WING UPPER SURFACE (RDVUS8)

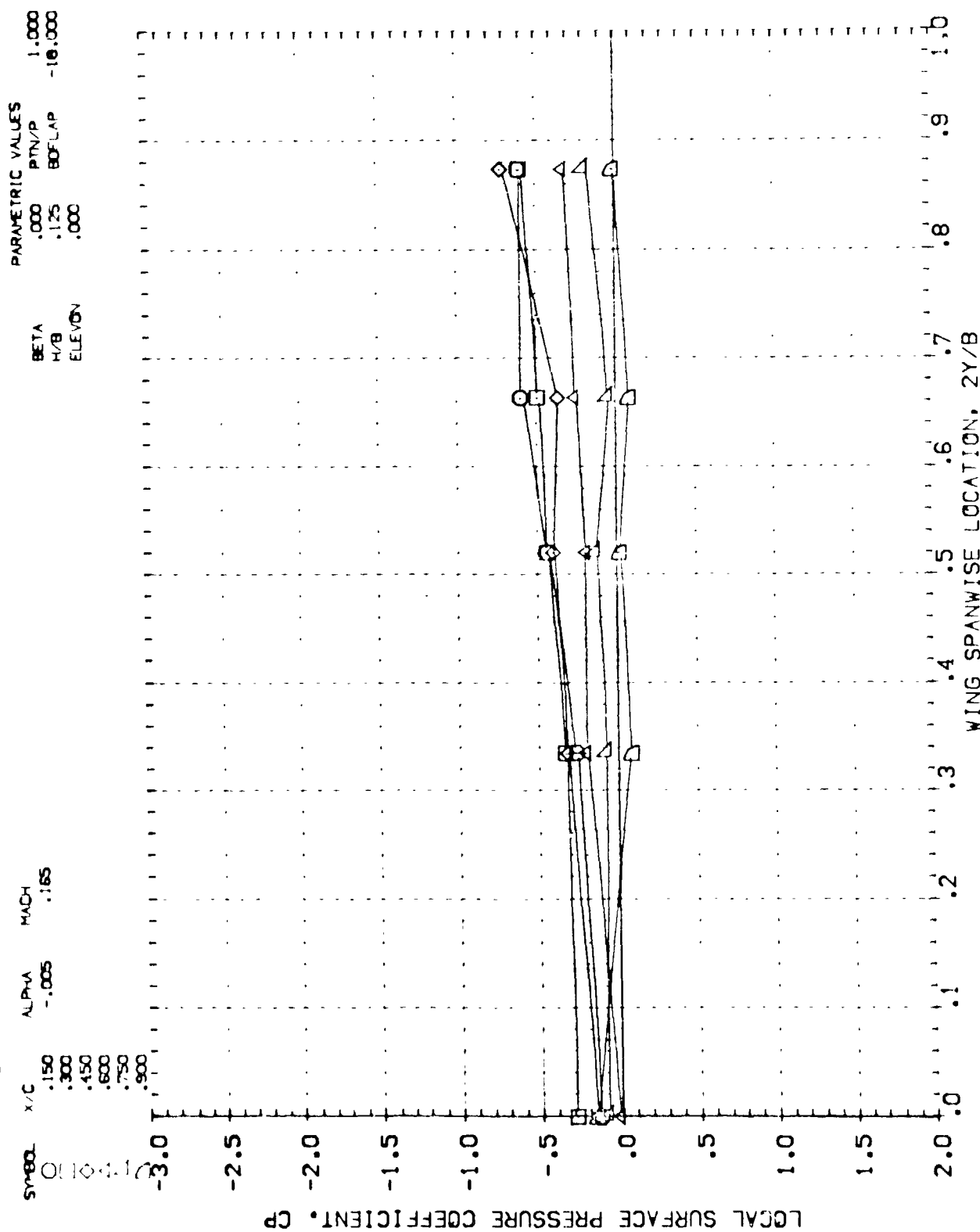
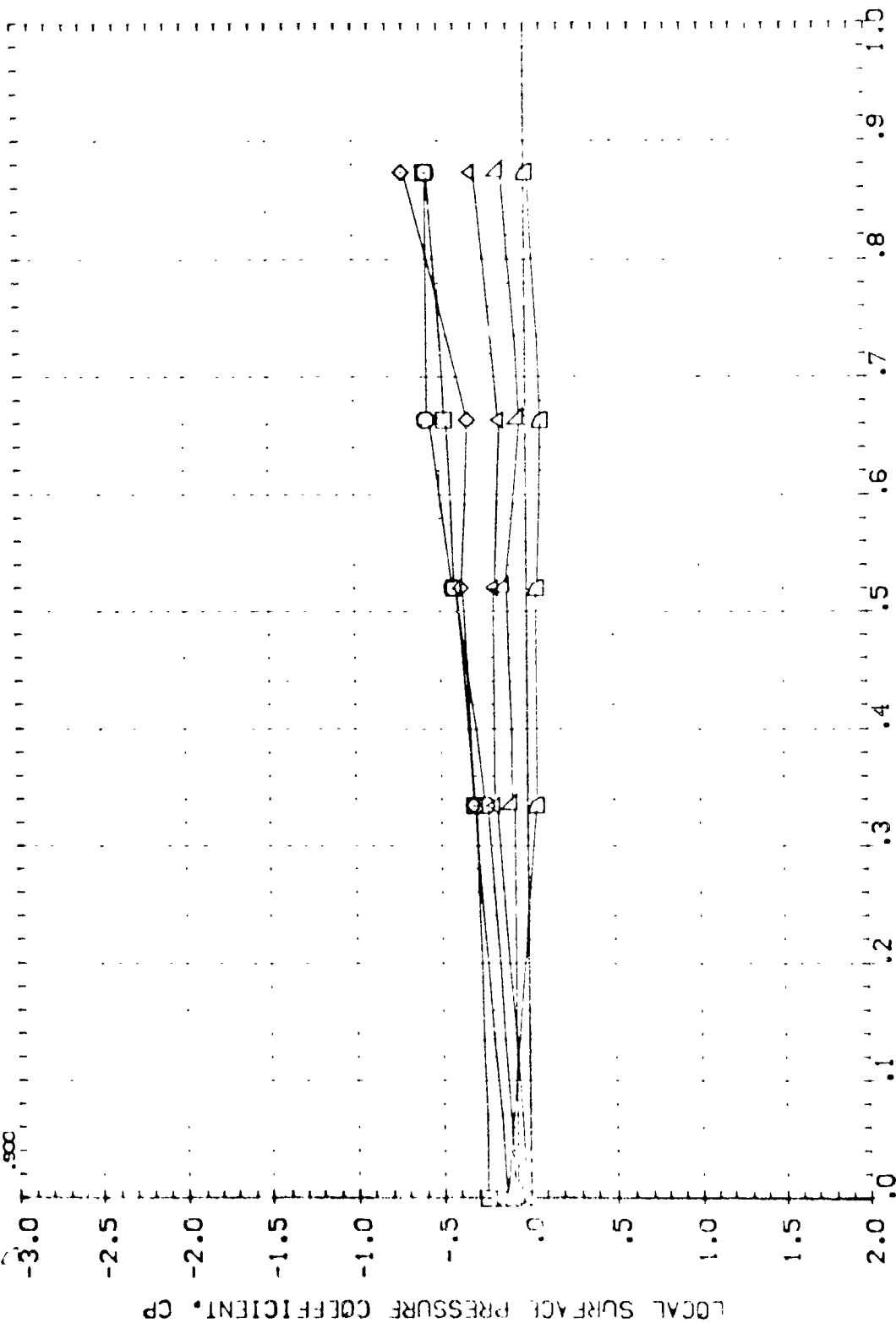


FIG 48 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.0, 0 ELEVON

CAS-3 B16CSF1 J41 W87E18 WING UPPER SURFACE (RDVJ53)

| | | | | | | | | | | |
|--------|-----|-------|------|-------------------|-------|---------|--------|-----|-------|---------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | | | | |
| | | | | BETA | PTN/P | BDF CAP | ELEVON | | | |
| | | | | | | | | H/B | 1.000 | -18.000 |
| | | | | | | | | | | |

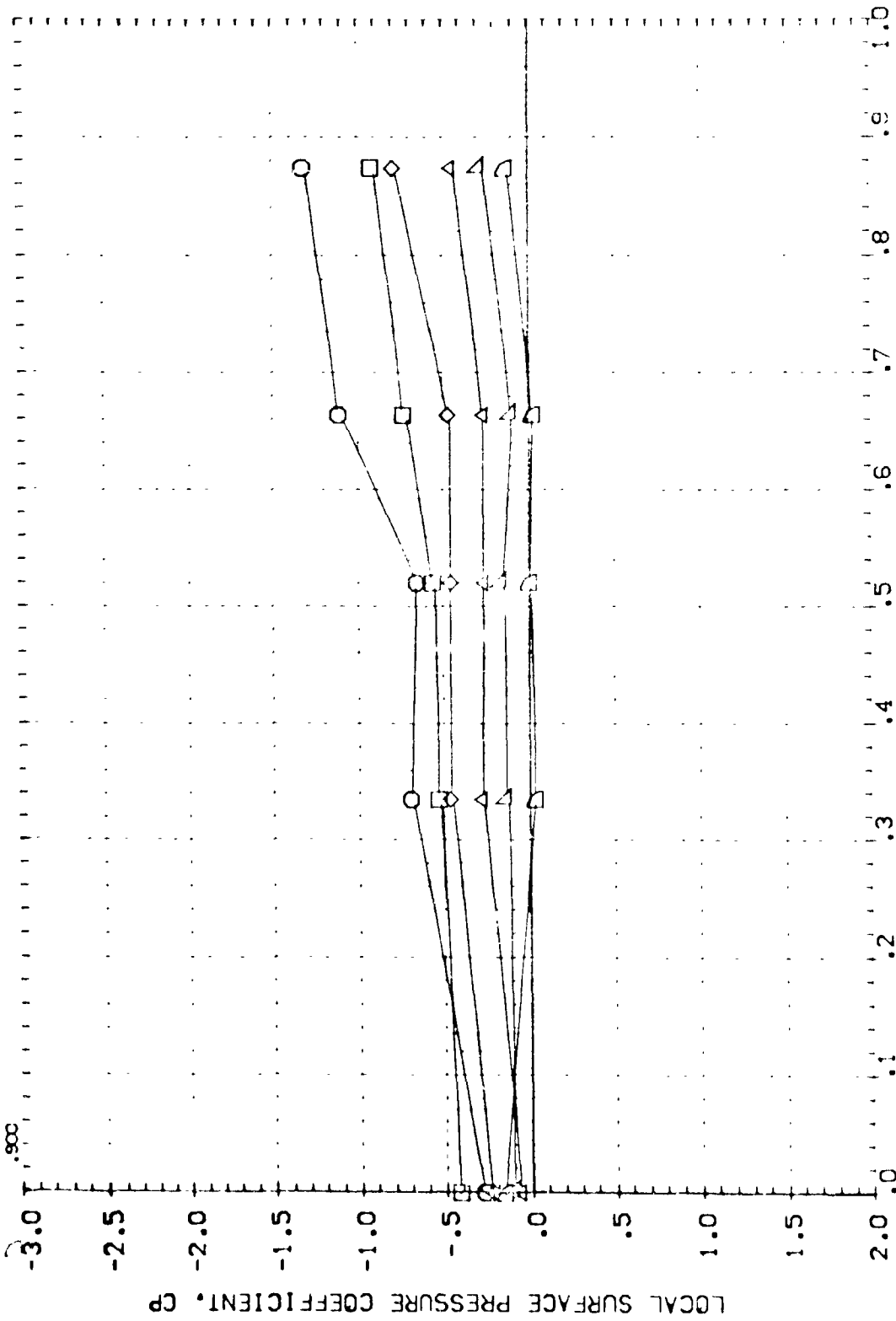


WING SPANWISE LOCATION, 2Y/B

FIG 48 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.0, 0 ELEVON

0457-B 81605F1 J41 197E18 WING UPPER SURFACE (RDVU53)

| | | | | | | | |
|--------|-----|-------|------|-------------------|--------|-------|---------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | 1.000 | |
| | | | | H/B | BDFLAP | .206 | -18.000 |
| | | | | ELEVON | .000 | | |



WING SPANWISE LOCATION, 2Y/B

FIG 48 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J41, PTN/P=1.0, 0 ELE ON

CAS57-B 516C5F1 J41 W87E18 WING UPPER SURFACE (RDVU55)

| | | | | | | |
|--------|-----|-------|------|-------------------|-------|---------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | |
| | | | | BETA | PTN/P | 1.300 |
| | | | | H/B | .039 | -18.000 |
| | | | | ELEVON | .000 | |

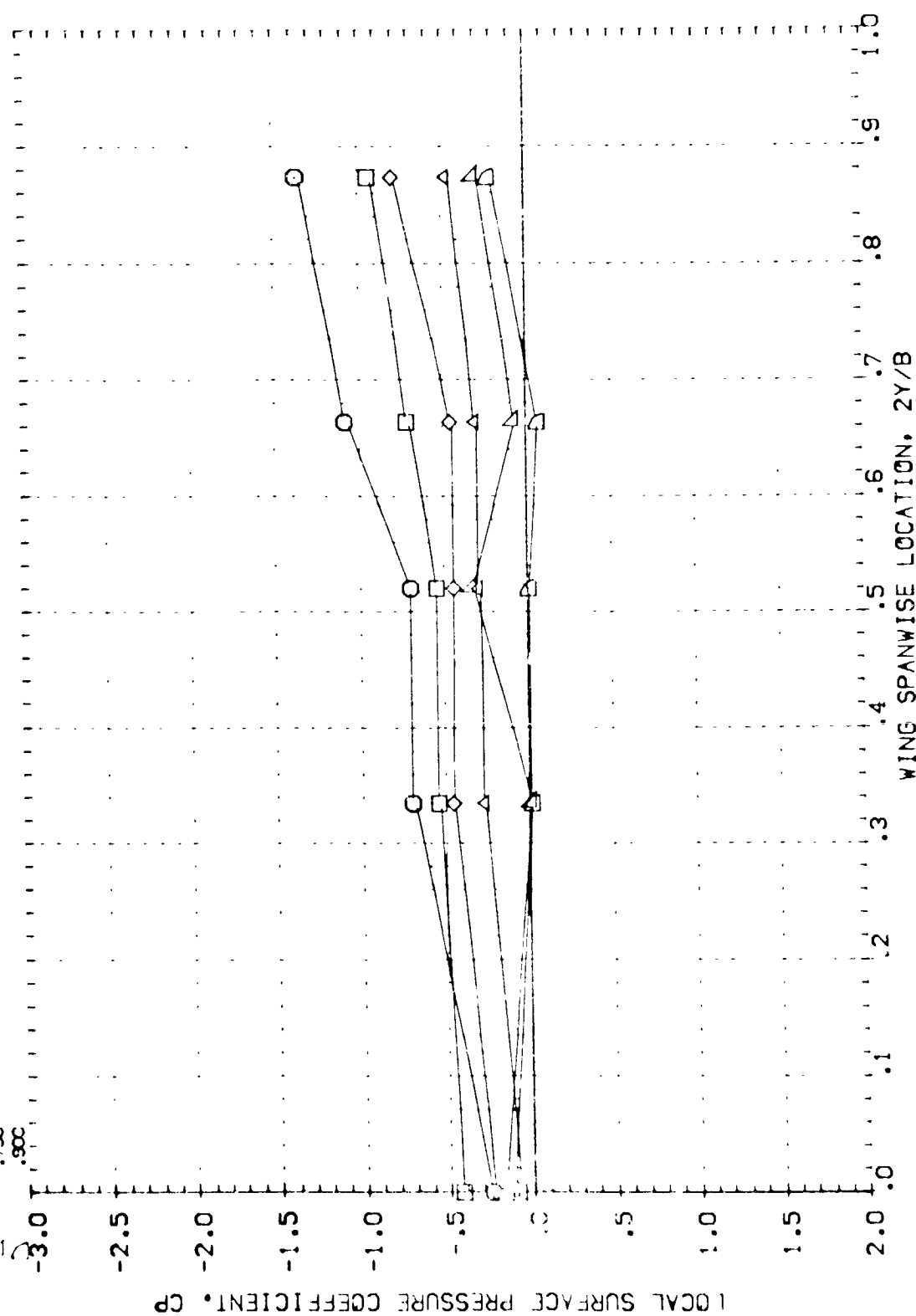


FIG 49 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B 916C5F1 J41 W87E18 WING UPPER SURFACE (RDVU57)

| | | | | | | |
|--------|------|-------|------|-------------------|--------|------------------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | |
| | | | | BETA H/B | PTN/P | 1.300 -18.000 |
| ○ | .150 | -.005 | .165 | .000 | BOFLAP | .000 |
| ◇ | .300 | | | .125 | | |
| △ | .450 | | | .000 | | |
| □ | .600 | | | | | |
| ◇ | .750 | | | | | |
| ◇ | .900 | | | | | |

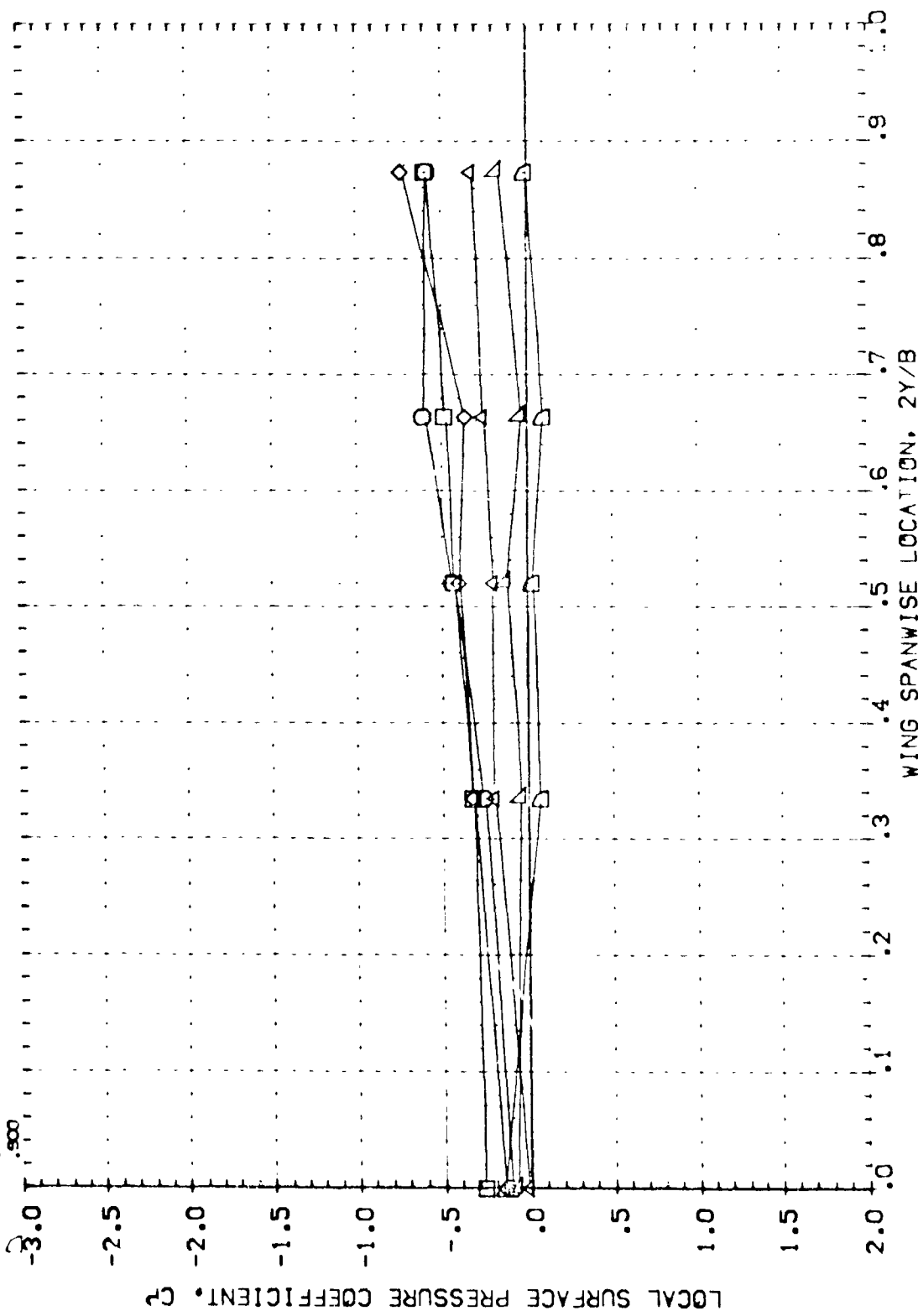


FIG 49 WING UPPER SURFACE PRESSURE SPANWISE DIS'N WITH J41, PTN/P=1.3, 0 ELEVON
WING SPANWISE LOCATION, 2Y/B
PAGE 217

0157-8 B16C5F1 J41 W87E18 WING UPPER SURFACE (RDVU57)

| | | | | | | | |
|--------|-----|-------|------|-------------------|-------|--------|---------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | 1,300 | |
| | | | | H/B | .125 | BDFLAP | -18,000 |
| | | | | ELEVON | .000 | | |

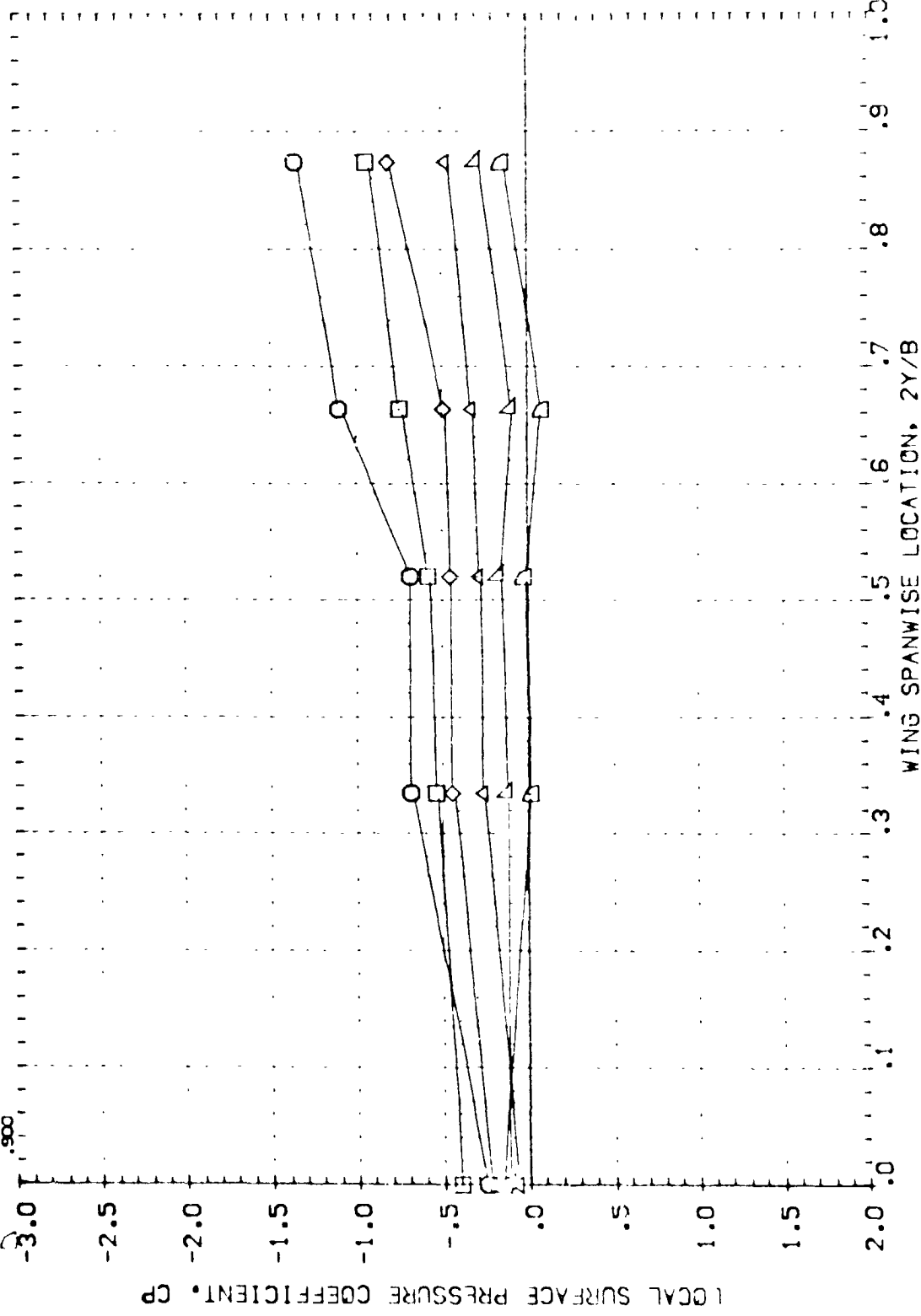


FIG 49 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3, 0 ELEVON

Figure 1 is a line graph showing the Local Surface Pressure Coefficient (C_p) versus the normalized distance (x/c) for a NACA 0012 airfoil at an angle of attack of 4° . The graph plots C_p values from -3.0 to 2.0 against x/c from 0.0 to 1.0. Four data series are shown: upper surface (circles), lower surface (triangles), upper surface with suction (squares), and lower surface with suction (diamonds). All series show a sharp drop in C_p near the leading edge ($x/c = 0$) and a recovery towards the trailing edge ($x/c = 1$). The suction cases show a more gradual recovery compared to the standard airfoil cases.

| x/c | Upper Surface (C_p) | Lower Surface (C_p) | Upper Surface with Suction (C_p) | Lower Surface with Suction (C_p) |
|-------|-------------------------|-------------------------|--------------------------------------|--------------------------------------|
| 0.0 | -2.8 | -2.8 | -2.8 | -2.8 |
| 0.1 | -1.5 | -1.5 | -1.5 | -1.5 |
| 0.2 | -0.5 | -0.5 | -0.5 | -0.5 |
| 0.3 | -0.2 | -0.2 | -0.2 | -0.2 |
| 0.4 | -0.1 | -0.1 | -0.1 | -0.1 |
| 0.5 | -0.05 | -0.05 | -0.05 | -0.05 |
| 0.6 | -0.02 | -0.02 | -0.02 | -0.02 |
| 0.7 | -0.01 | -0.01 | -0.01 | -0.01 |
| 0.8 | -0.005 | -0.005 | -0.005 | -0.005 |
| 0.9 | -0.002 | -0.002 | -0.002 | -0.002 |
| 1.0 | -0.001 | -0.001 | -0.001 | -0.001 |

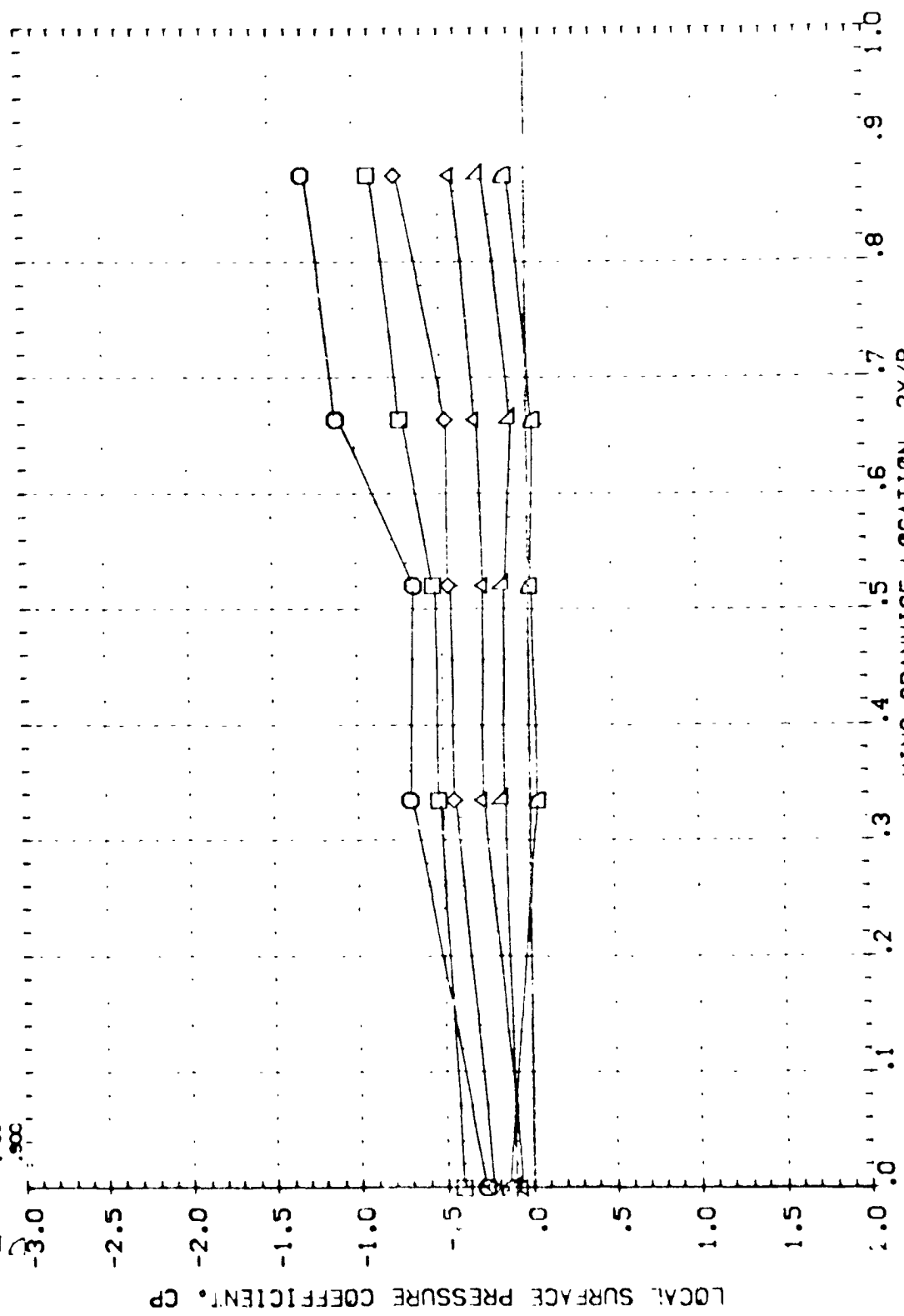
WING SPANWISE LOCATION. 2Y/B

0457-B B:6C5F: J41 W87E18 WING UPPER SURFACE (RDVU52)

PARAMETRIC VALUES
 BETA P P 1.300
 H/B B LAP -18.000
 ELEVON .000

ALPHA MACH
 9.990 .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, 2Y/B

FIG 49 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3 0 ELEVON

0457-9 31605F: J42 W87E18 WING UPPER SURFACE (RDVU64)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .009 BOF AP -10.000
 ELEVON .000

ALPHA 10.000
 MACH .165

X C
 .150
 .300
 .450
 .600
 .750
 .900

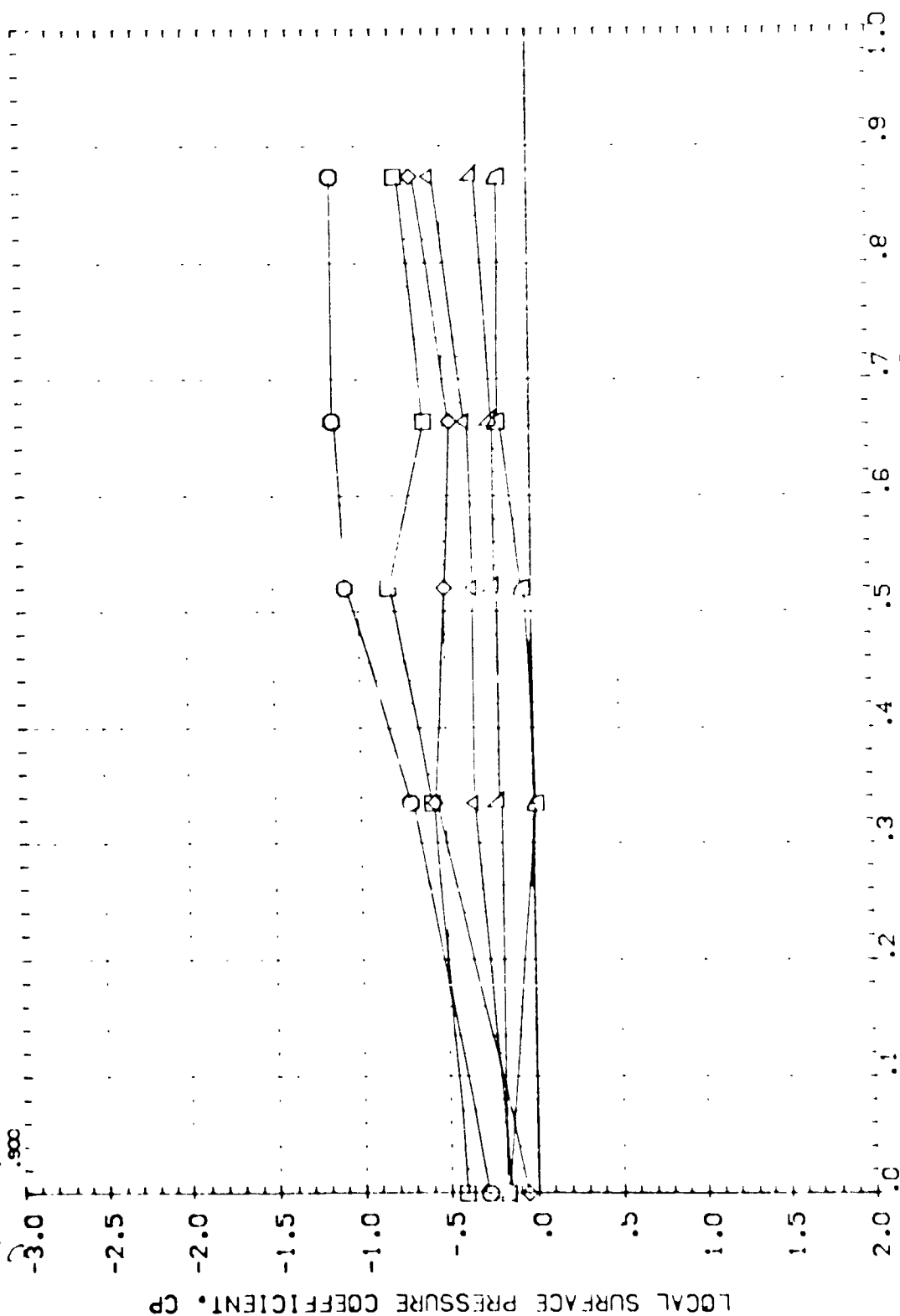


FIG 50 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J42 PTN/P=1.0, 0 ELEVON

0457-9 9160SF1 J42 W87E18 WING UPPER SURFACE (RDVU61)

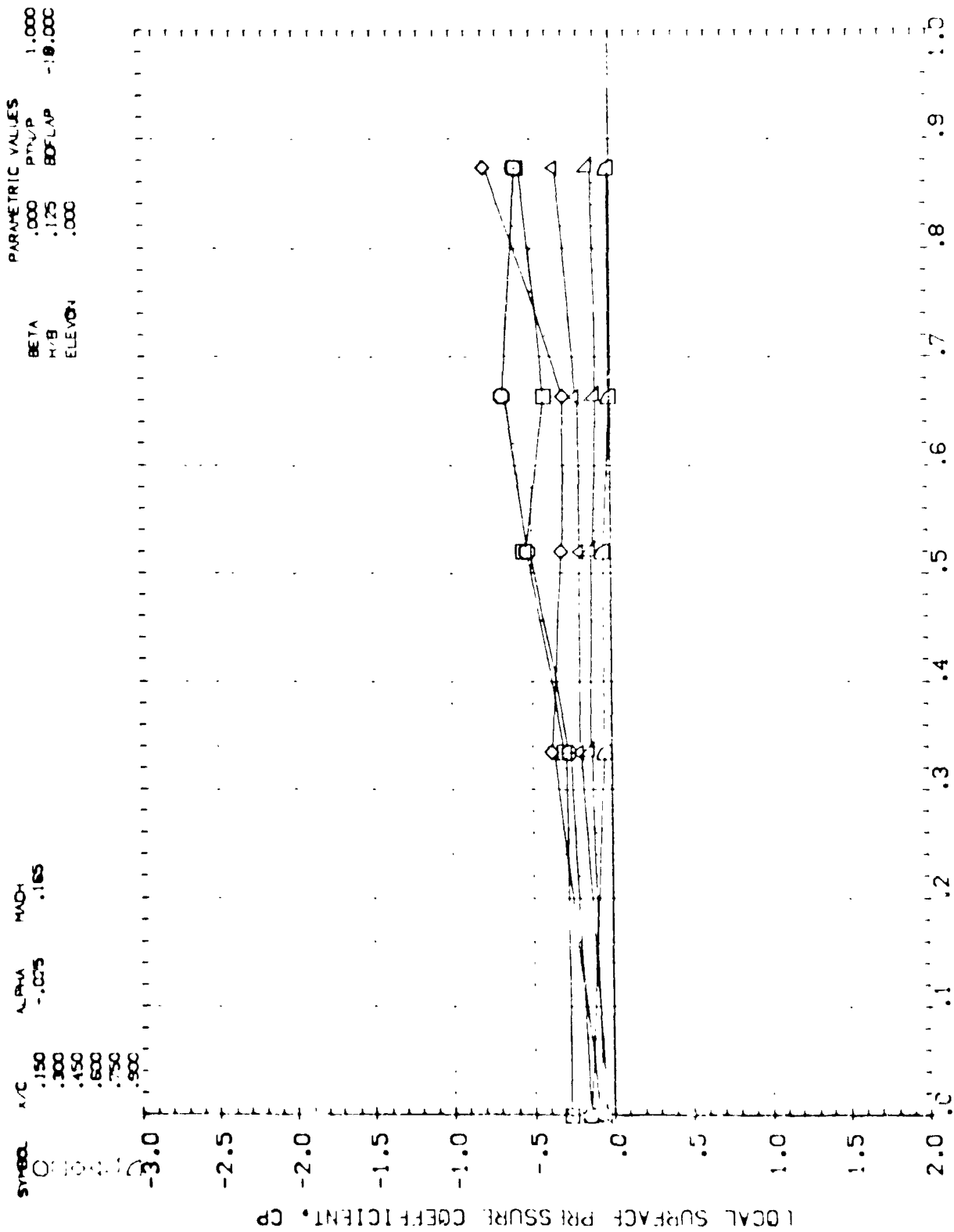
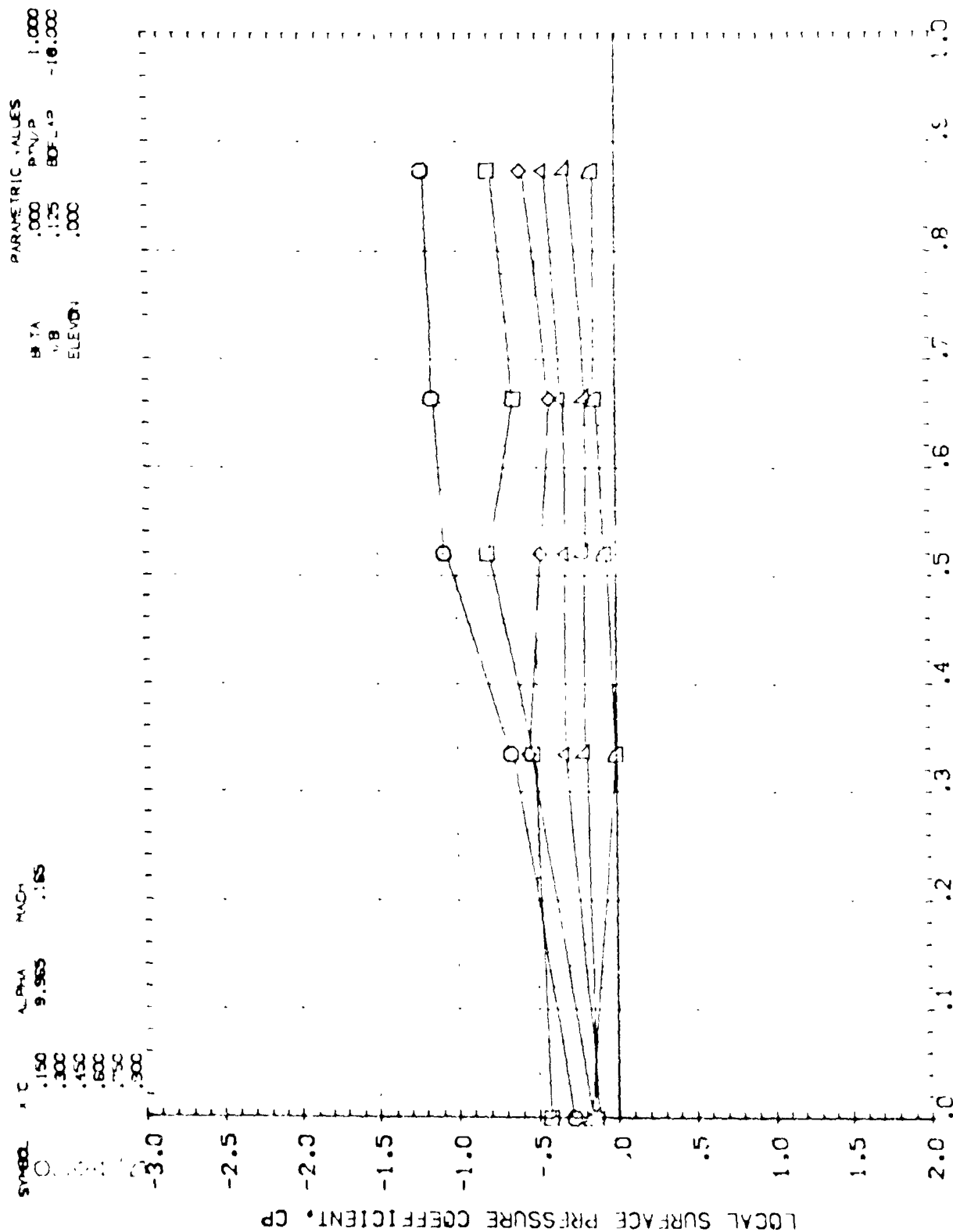


FIG 50 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, $DTN/P=1.0$, 0 ELEVON

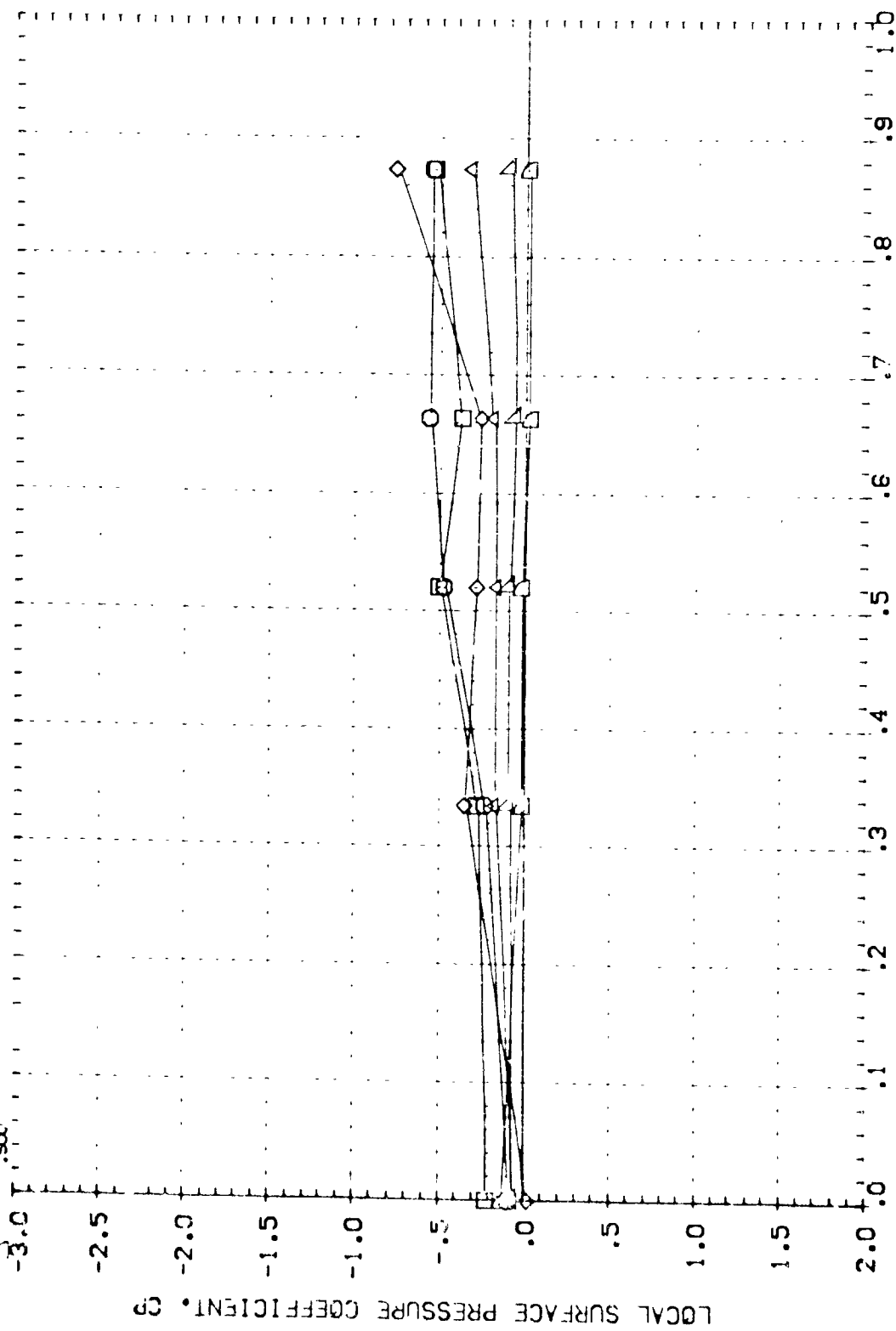
CASE 18 9160SF1 J42 W87E18 WING UPPER SURFACE (RDVU61)

PARAMETRIC VALUES
 ALPHA 9.965
 MACH .165
 REYNOLDS 1,000
 BETA 1.000
 PITCH 0.000
 ROLL 0.000
 ELEVATION 0.000



045/-9 91605F1 J4 W87E18 WING UPPER SURFACE (RDYU70)

| | | | | | |
|--------|------|--------|------|-------------------|--------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | |
| | | | | BETA | PTN/P |
| ○ | .150 | -0.010 | .165 | .000 | 1.000 |
| ◇ | .100 | | | .206 | BOFLAP |
| △ | .450 | | | .000 | ELEVON |
| □ | .600 | | | | |
| ◇ | .750 | | | | |
| ○ | .900 | | | | |

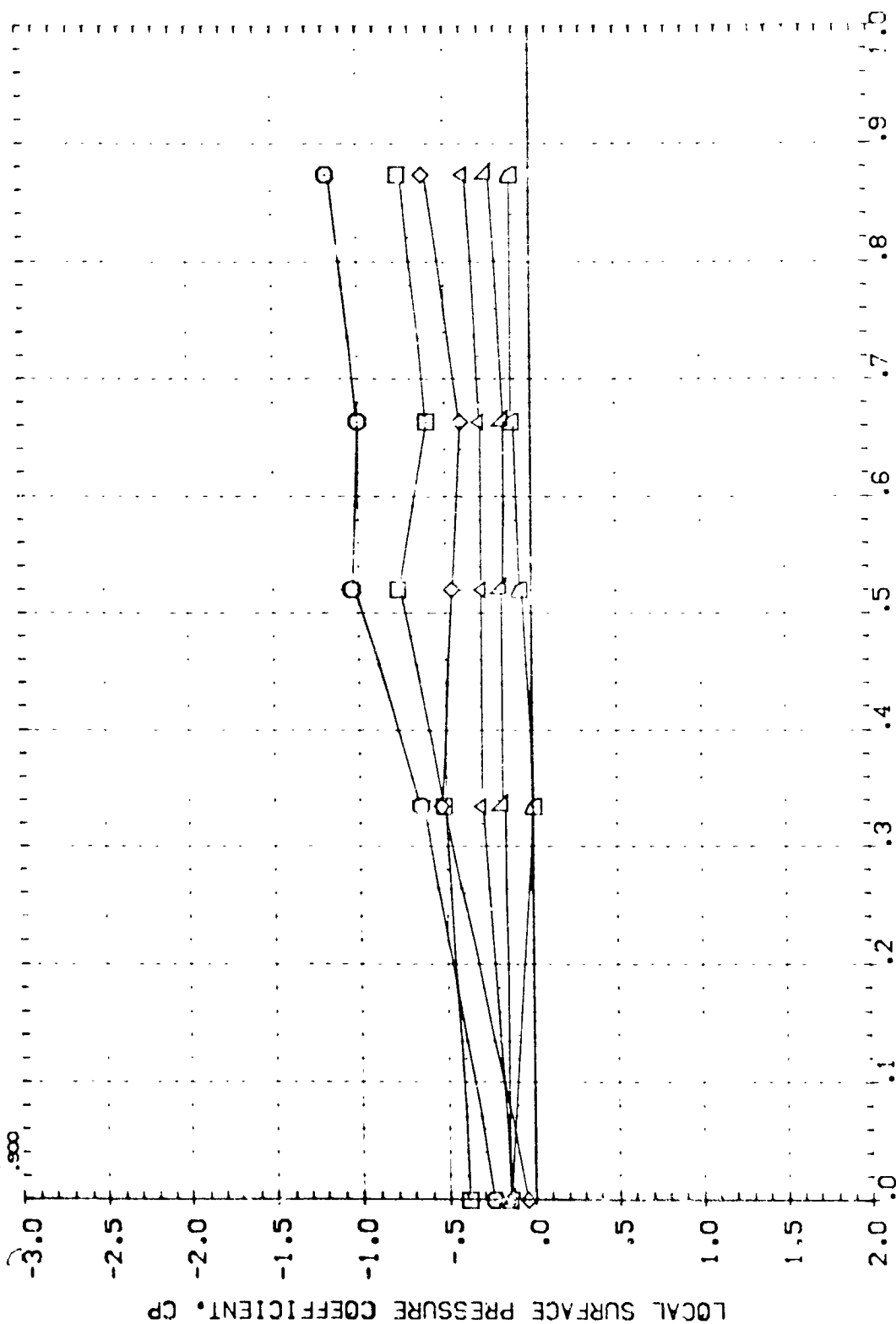


WING SPANWISE LOCATION, 2Y/B

FIG 50 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.0, 0 ELEVON

0A57-3 316C5F1 J42 W87E18 WING UPPER SURFACE (RDVU70)

| | | | | | | |
|-----|-------|------|-------------------|-------|--------|---------|
| X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | BETA | PTN/P | 1.000 | |
| | | | H/B | .286 | BDFLAP | -19.000 |
| | | | ELEVON | .000 | | |

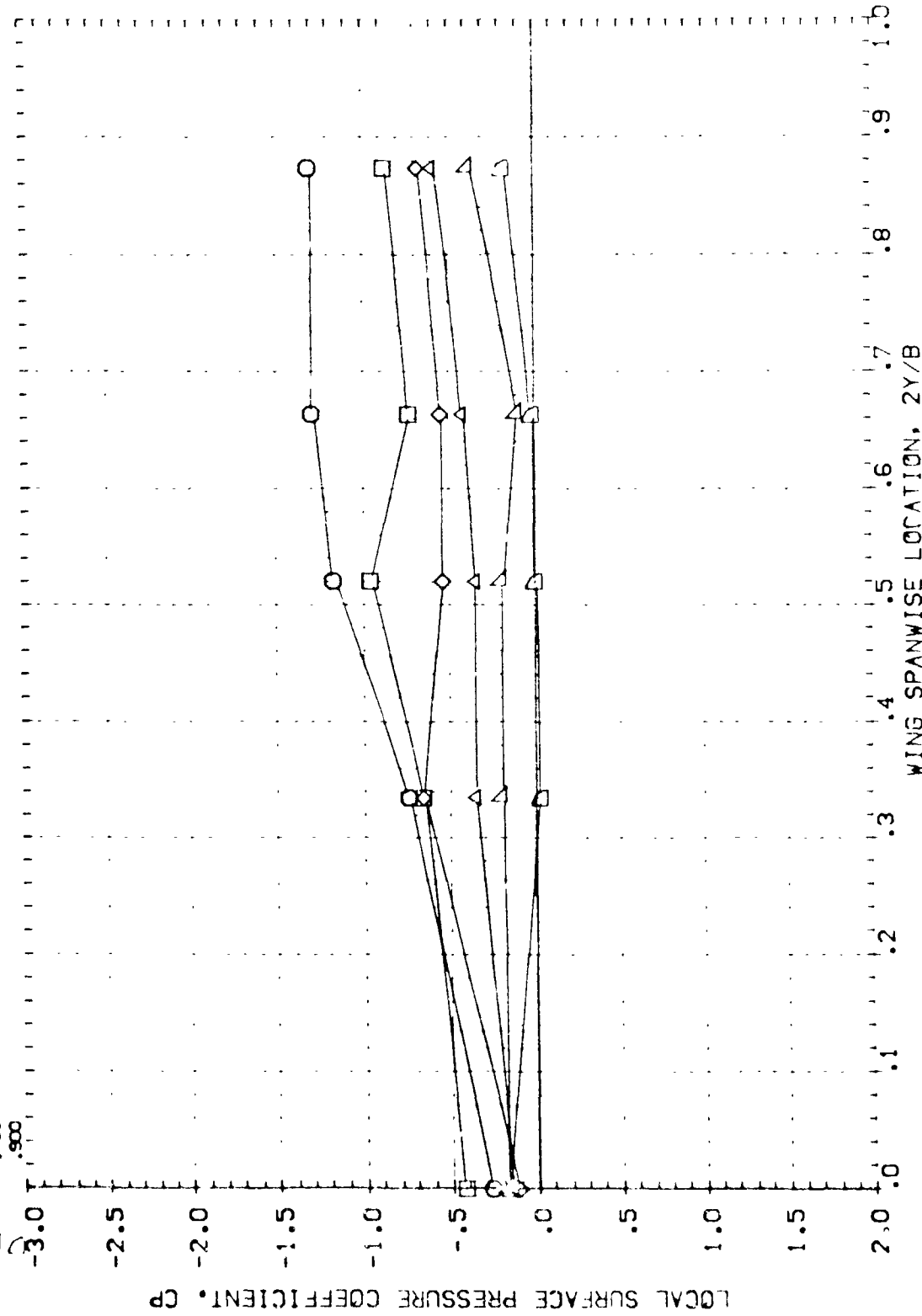


WING SPANWISE LOCATION, 2Y/B

FIG 50 WING UPPER SURFACE PRESSURE SPANWISE DISR WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU63)

| | | | | | | | |
|--------|-----|-------|------|-------------------|--------|---------|--|
| Symbol | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | 1.300 | |
| | | | | H/B | BOFLAP | -10.000 | |
| | | | | ELEVON | .000 | | |



WING SPANWISE LOCATION, 2Y/B

FIG 51 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B 3:6C5F1 J42 W87E18 WING UPPER SURFACE (RDVU60)

| SYMBOL | X/C | ALPHA | M/D | PARAMETRIC VALUES | | |
|--------|------|--------|------|-------------------|--------|---------|
| | | | | BETA | PTN/P | 1,300 |
| | .150 | -0.010 | .165 | H/B | 30FLAP | -13 000 |
| | .300 | | | ELEVON | | |
| | .450 | | | | | |
| | .600 | | | | | |
| | .750 | | | | | |
| | .900 | | | | | |

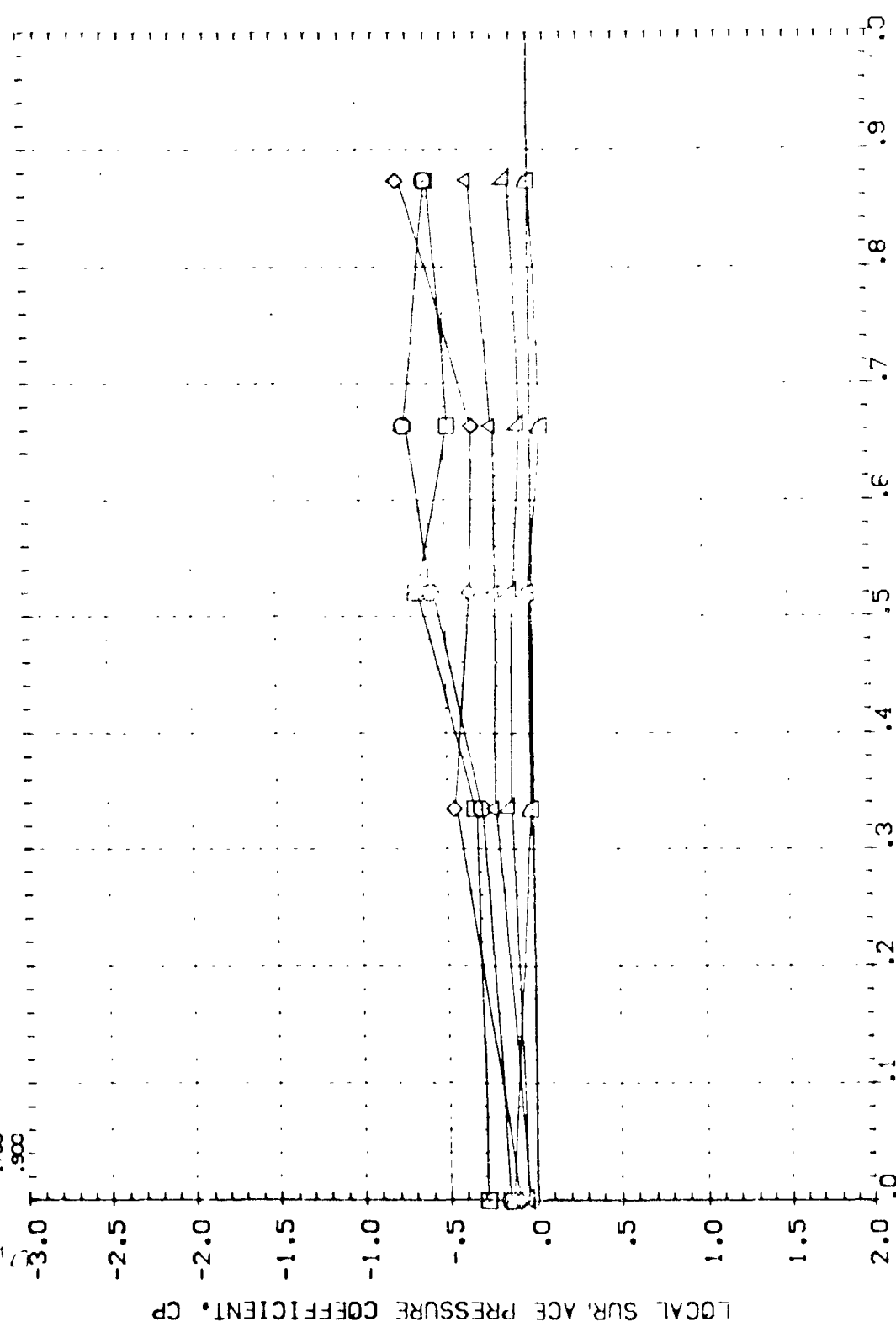
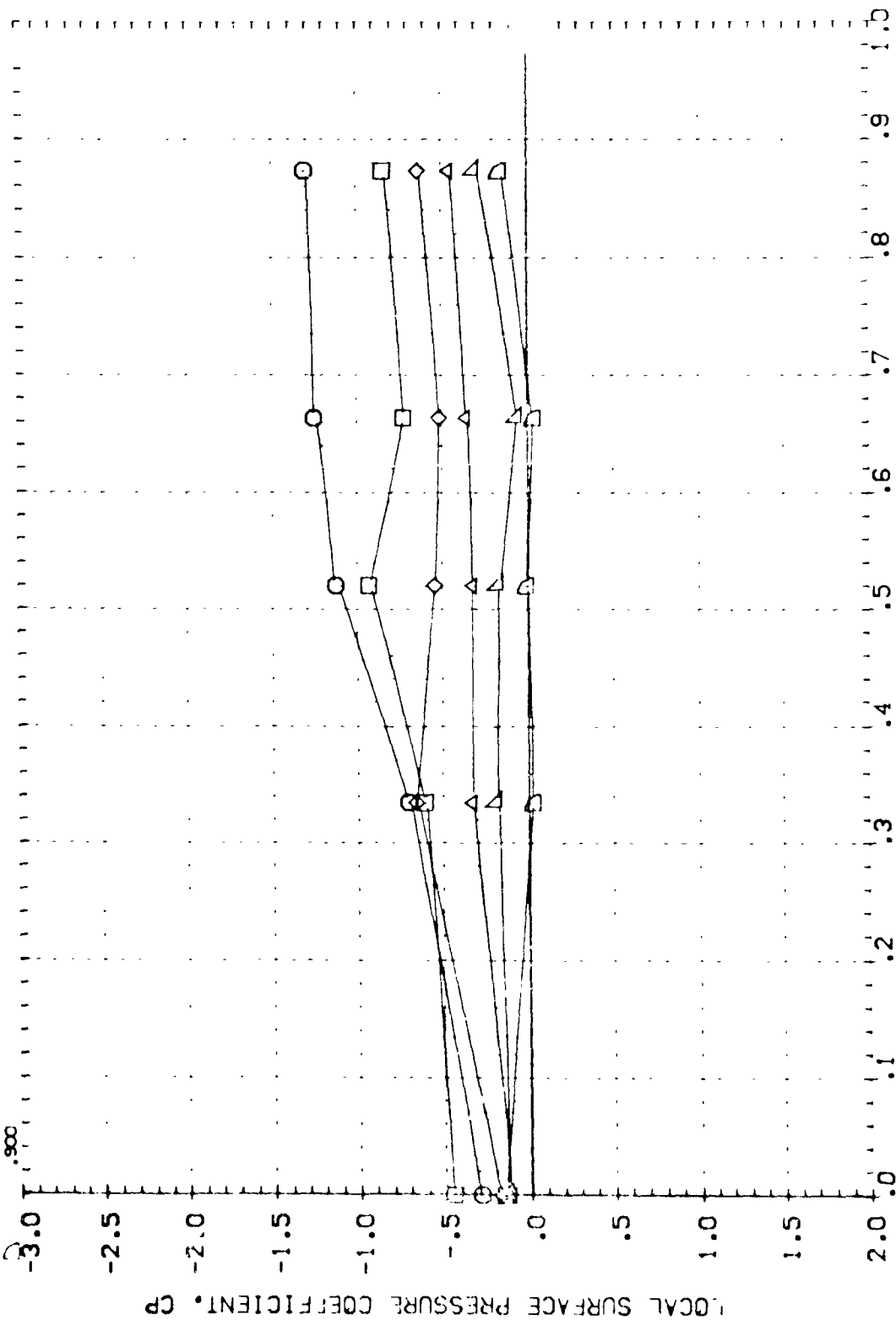


FIG 51 WING UPPER SURFACE PRESSURE SPANWISE DISC'D WITH W42, PTN/P=1.3, 0 ELEVON

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BOF/AP -18.000
 ELEVON .000

ALPHA 9.950 MACH .165
 X/C .150
 .300
 .450
 .600
 .750
 .900

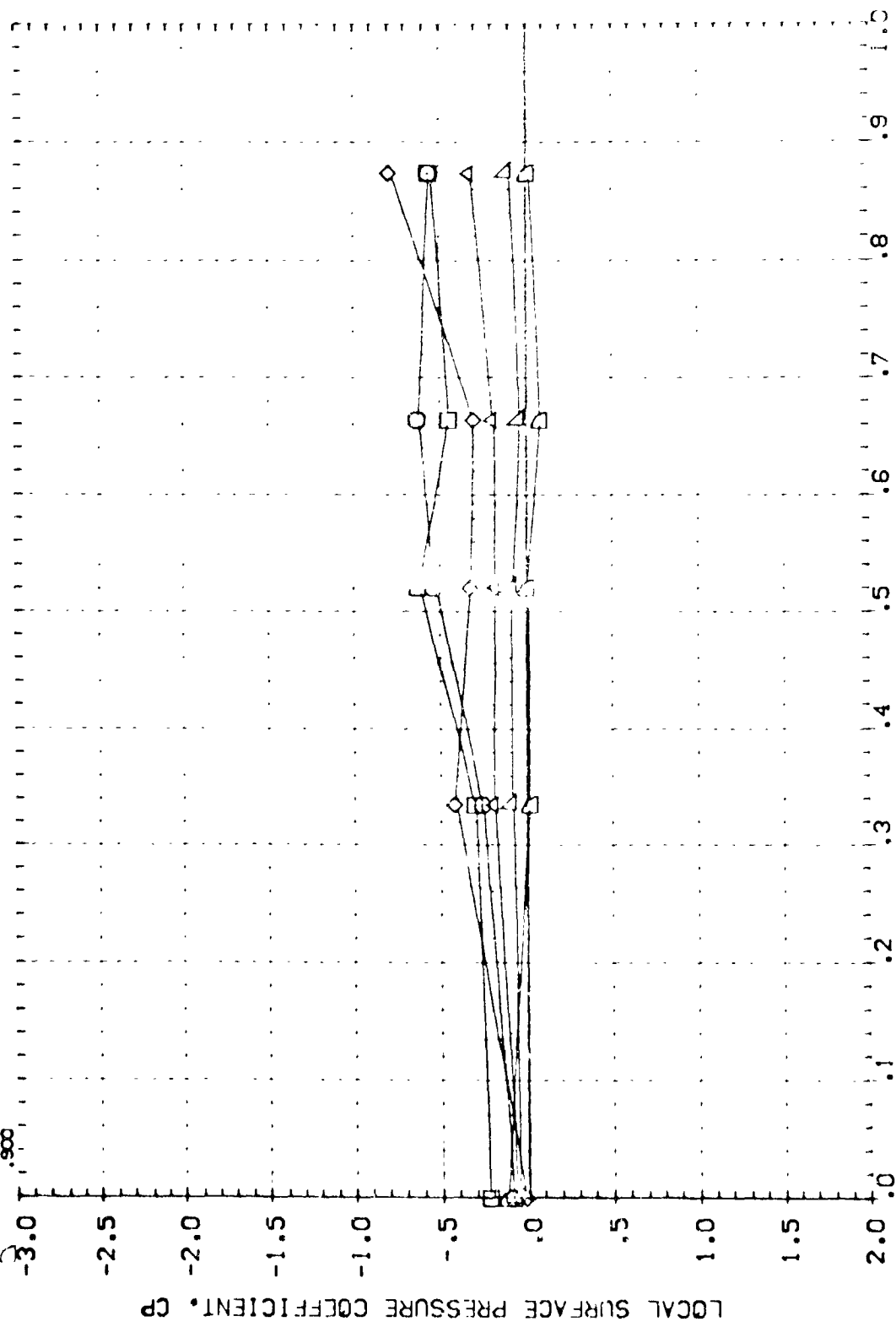


WING SPANWISE LOCATION, 2Y/B

FIG 51 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.3, 0 ELEVON

GA57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVJ69)

| | | | | | | | | |
|--------|---|---|-------|------|-------------------|-------|--------|---------|
| SYMBOL | X | C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | | BETA | PTN/P | 1.300 | |
| | | | | | H/B | .586 | BOFLAP | -18.000 |
| | | | | | ELEVON | .000 | | |



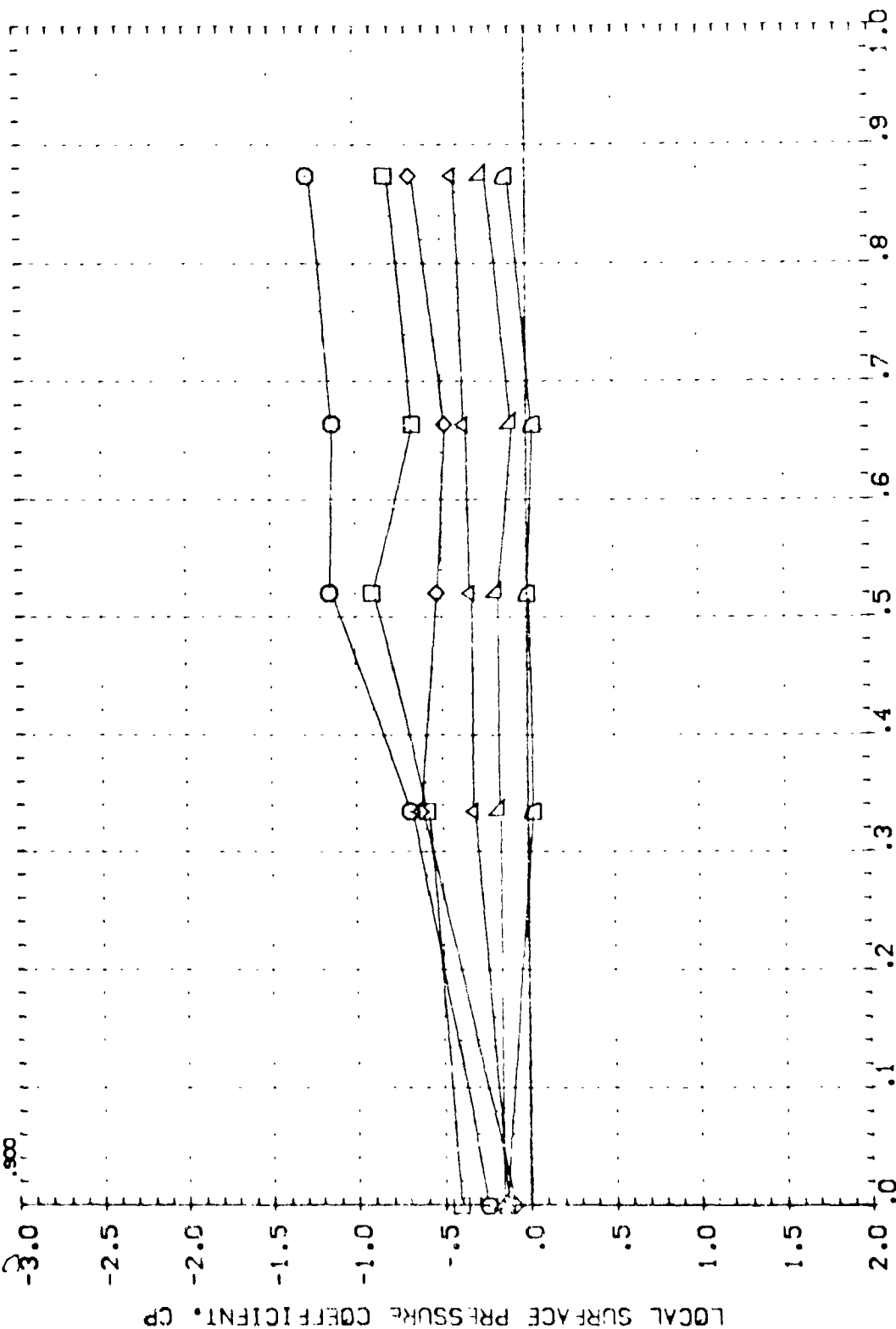
WING SPANWISE LOCATION, 2Y/B

FIG 51 WING UPPER SURFACE PRESSURE SPANWISE DISR AT J42, PTN/P=1.3, 0.0, 0.5, 1.0

PARAMETRIC VALUES
 BETA .000 1.300
 P_{TN}/P .286 0.000
 ELEVON .000 -18.000

ALPHA 10.010
 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900

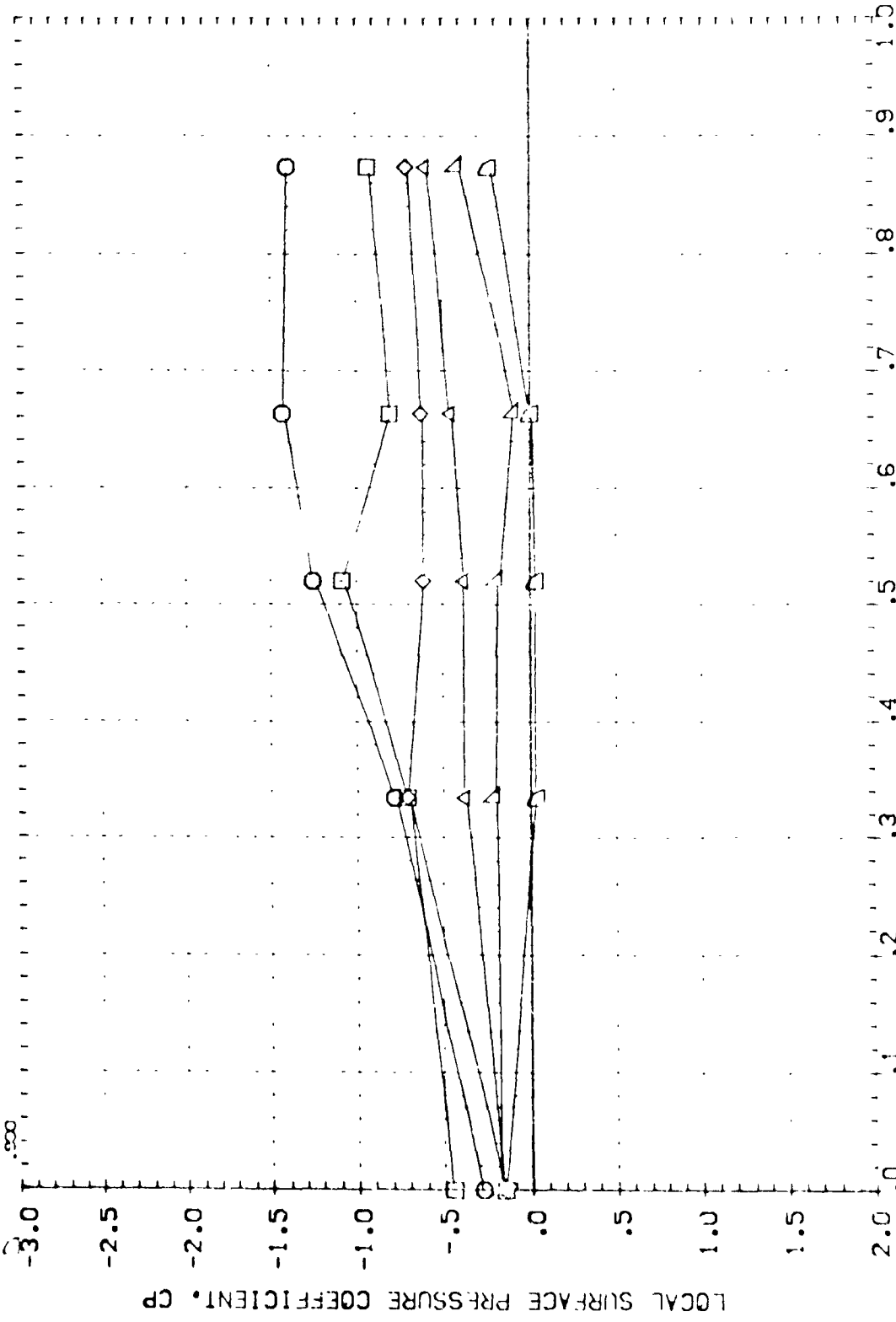


WING SPANWISE LOCATION, 2Y/B

FIG 51 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, P_{TN}/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 #87E18 WING UPPER SURFACE (RDVU62)

| Symbol | X/C | ALPHA | MACH | PARAMETRIC VALUES | |
|--------|------|--------|------|-------------------|------------------|
| | | | | BETA H/B | PTN/P 90° CAP |
| ○ | .150 | 10.000 | .165 | .000 | 1.500 |
| □ | .300 | | | .039 | -18.000 |
| ◇ | .450 | | | .000 | |
| △ | .600 | | | | |
| ▽ | .750 | | | | |
| ● | .900 | | | | |



WING SPANWISE LOCATION, 2Y/B

FIG 52 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J42, PTN/P=1.5, 0 ELEVATION

0A57-B B:6C5F1 J42 W87E18 WING UPPER SURFACE (RDVU59)

| | | | | |
|------|-------|--------|-------------------|---------|
| MACH | ALPHA | BETA | PARAMETRIC VALUES | |
| | | | PTN/P | 1.500 |
| .150 | -.010 | H/B | .000 | |
| .300 | | ELEVON | .175 | BOFLAP |
| .450 | | | .000 | -18.000 |
| .600 | | | | |
| .750 | | | | |
| .900 | | | | |

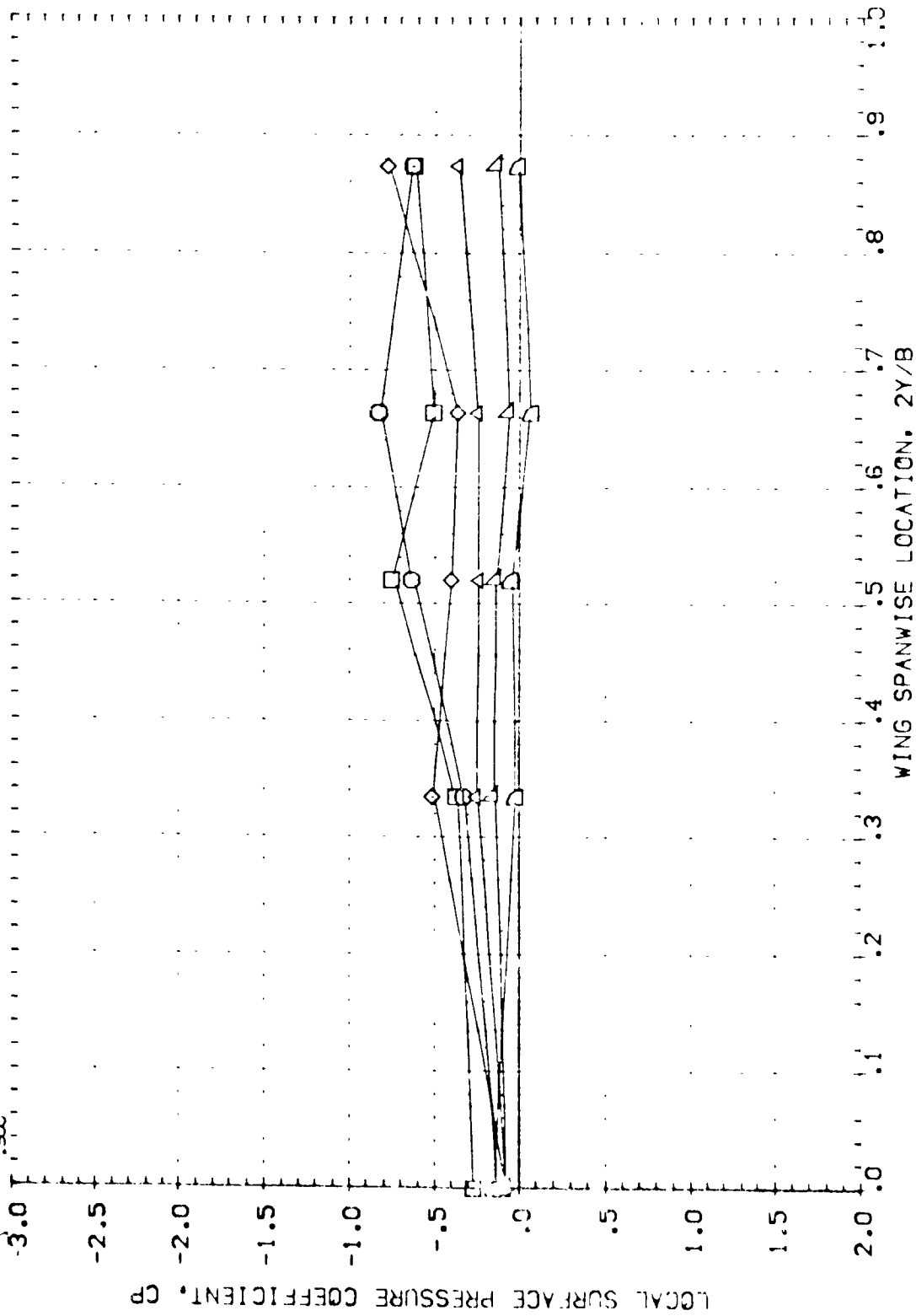
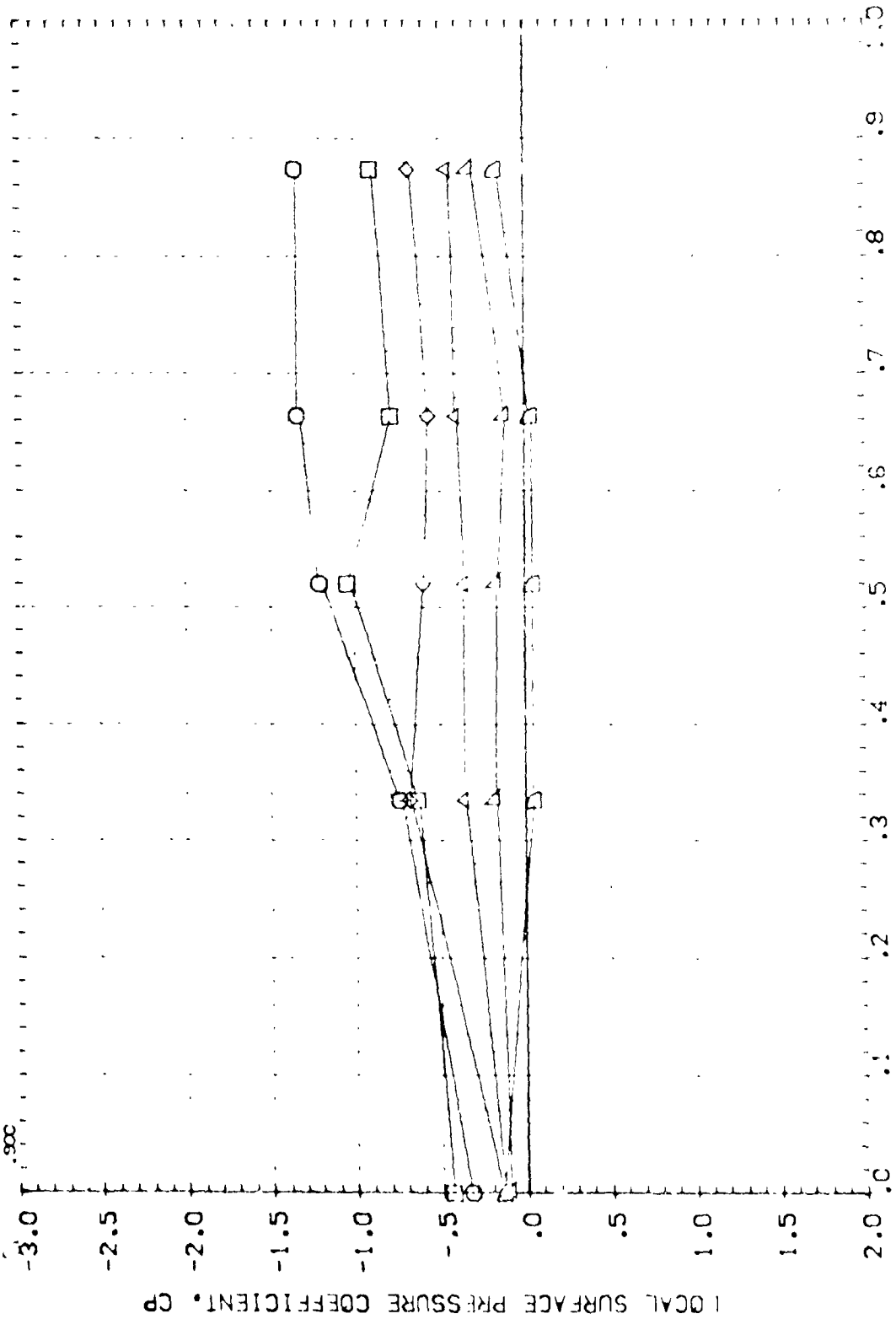


FIG 52 WING UPPER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.5, 0 ELEVON

CAS-3 B16C5F: J42 W8TE18 WING UPPER SURFACE (RDVU59)

| | | | | | | |
|--------|------|-------|------|-------------------|-------|---------|
| Symbol | A/C | ALPHA | MACH | PARAMETRIC VALUES | | |
| | | | | BETA H/B | PTN/P | BOFLAP |
| ○ | .150 | 9.955 | .165 | | .000 | 1.500 |
| □ | .300 | | | | .125 | -16.000 |
| ◇ | .450 | | | | .000 | |
| △ | .600 | | | | | |
| ▽ | .750 | | | | | |
| ● | .900 | | | | | |



WING SPANWISE LOCATION, 2Y/B

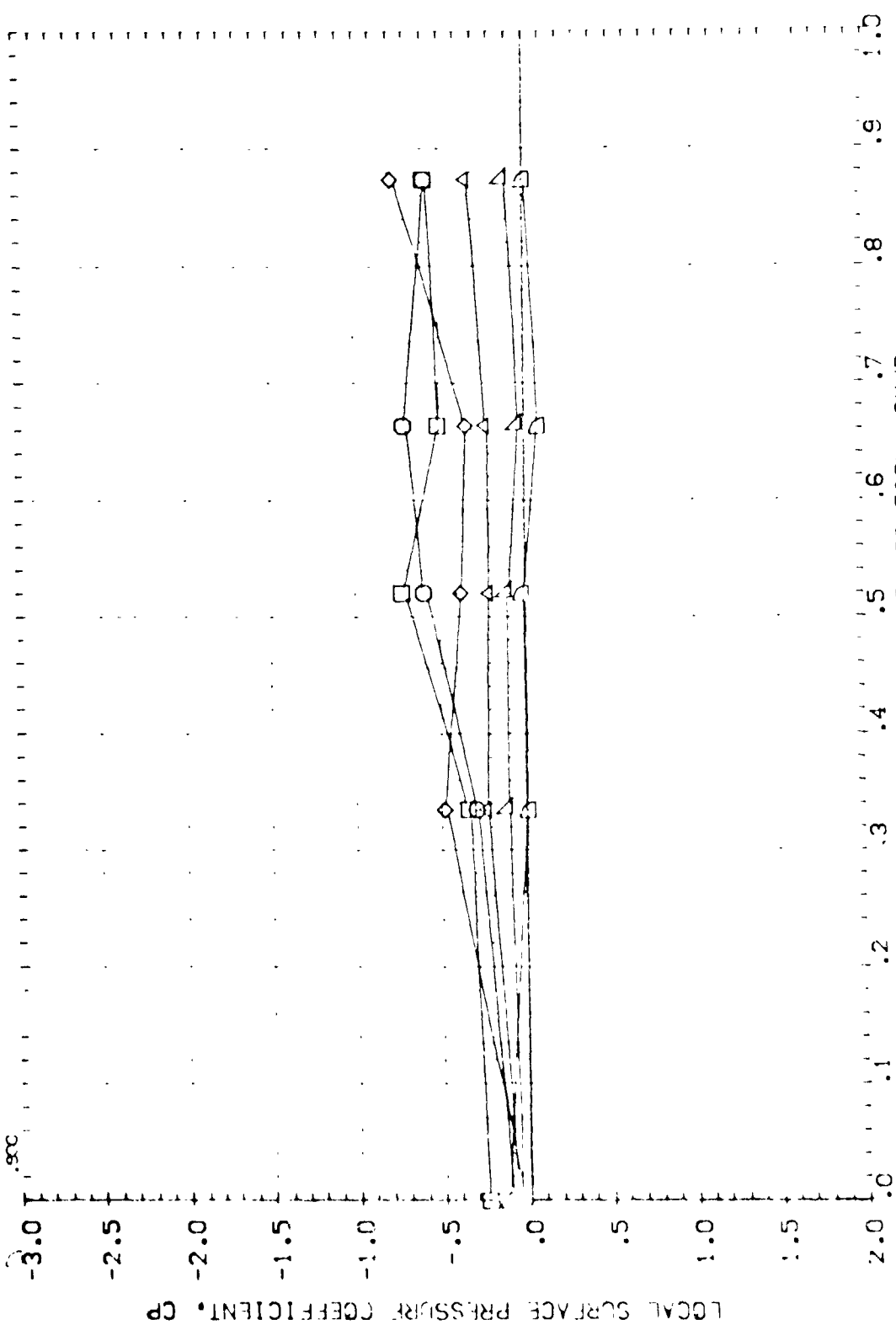
FIG 52 WING UPPER SURFACE PRESSURE COEFFICIENT, CP

GA57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RD/VU68)

PARAMETRIC VALUES
 BETA .000 PTN/P .500
 H/B .286 BDFLAP -18.000
 ELEVON .000

ALPHA .010
 MACH .165

Symbol
 .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, 2Y/B

FIG 52 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J42, PTN/P=.5, 0 ELEVON

CASE 13 B1605F: J42 #87E18 WING UPPER SURFACE (RDVJ68)

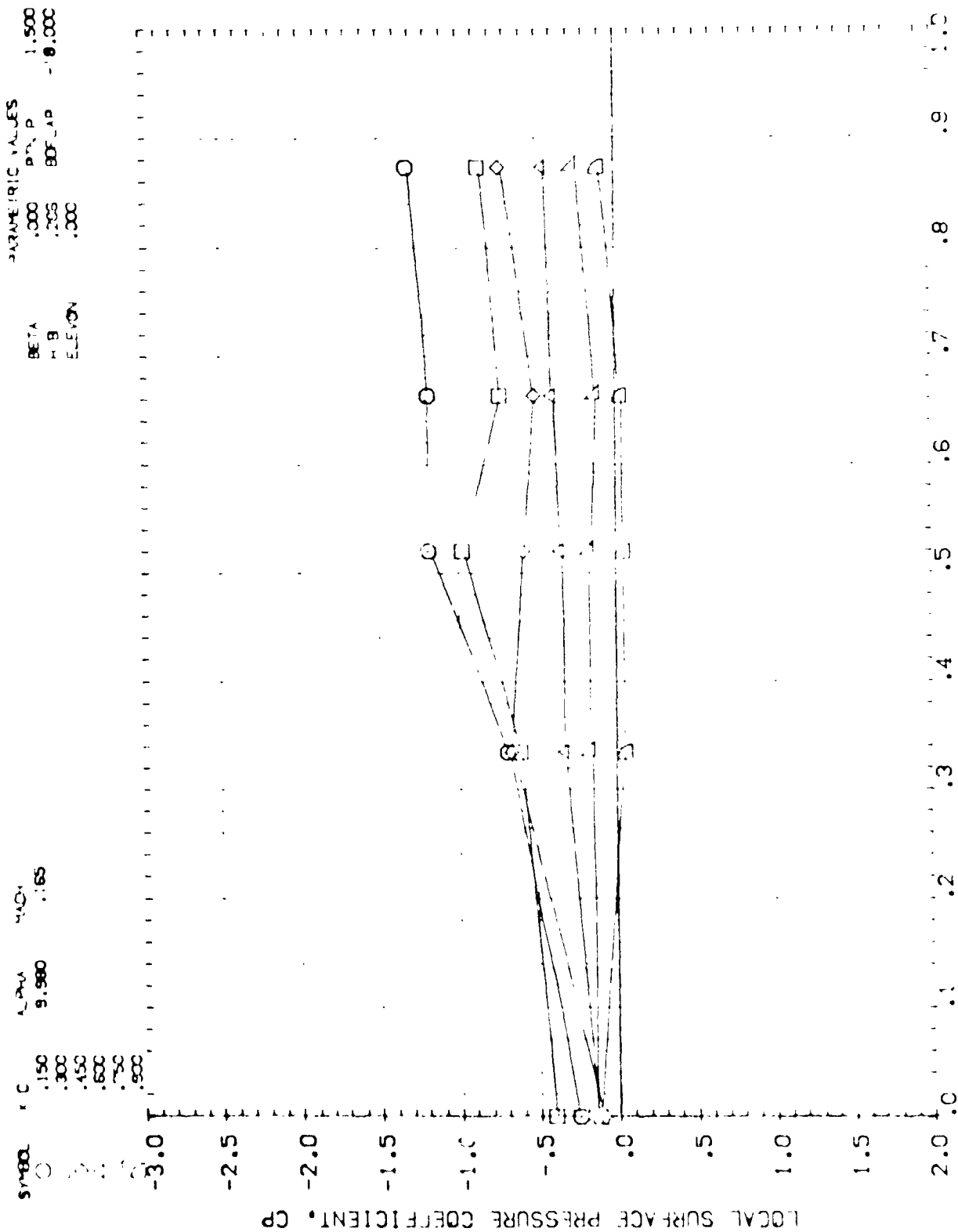
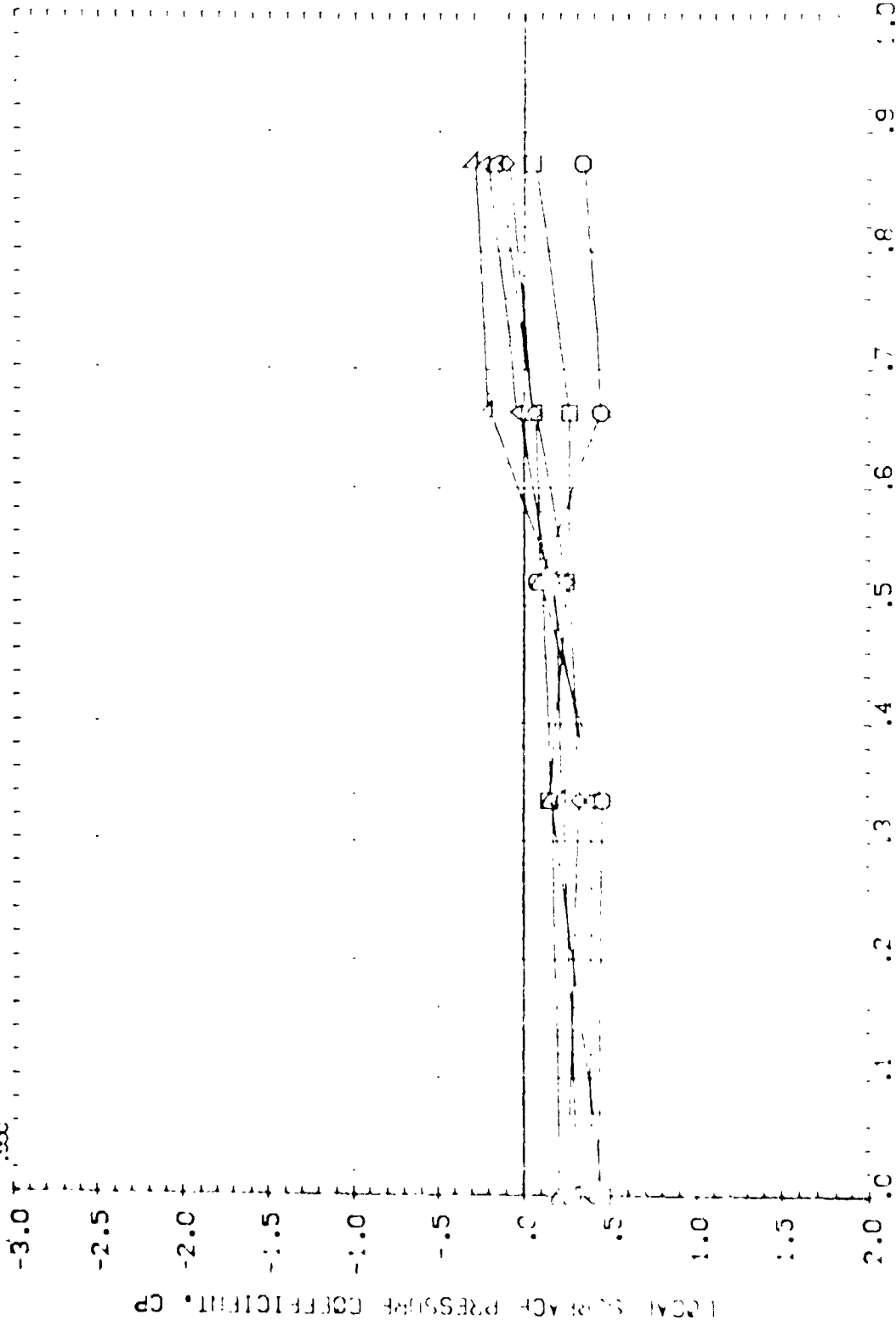


FIG 52 WING UPPER SURFACE PRESSURE SPANWISE DISTRIBUTION, 2Y/B

| PARAMETRIC VALUES | BETA | ALPHA | MACH |
|-------------------|------|--------|------|
| BETA | .000 | 10.000 | .165 |
| H B | .039 | | |
| ELEVATION | .000 | | |

[illegible]

0457-3 3160571 J40 W87E18 41.0 LOWER SURFACE (RDAL06)

| SYMBOL | C | ALPHA | W/O | PARAMETRIC VALUES | | |
|--------|---|-------|------|-------------------|-------|---------|
| | | | | BETA | P.P.P | BOF AP |
| .150 | | .010 | .165 | | .000 | 1.000 |
| .300 | | | | H B | .005 | -10.000 |
| .450 | | | | ELEV | .000 | |
| .600 | | | | | | |
| .750 | | | | | | |
| .900 | | | | | | |

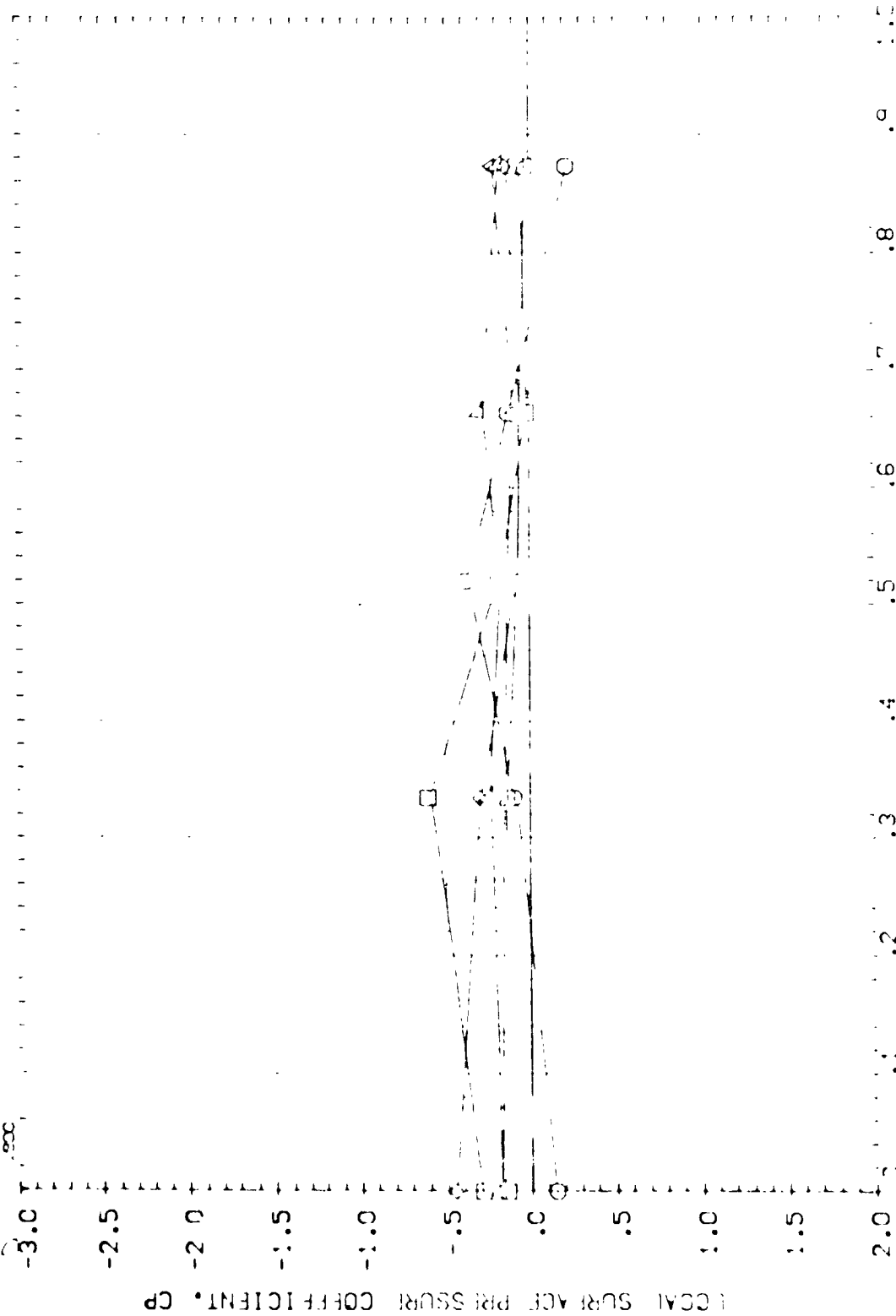


FIG 53 WING SURFACE PRESSURE COEFFICIENTS, 2Y/B

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL06)

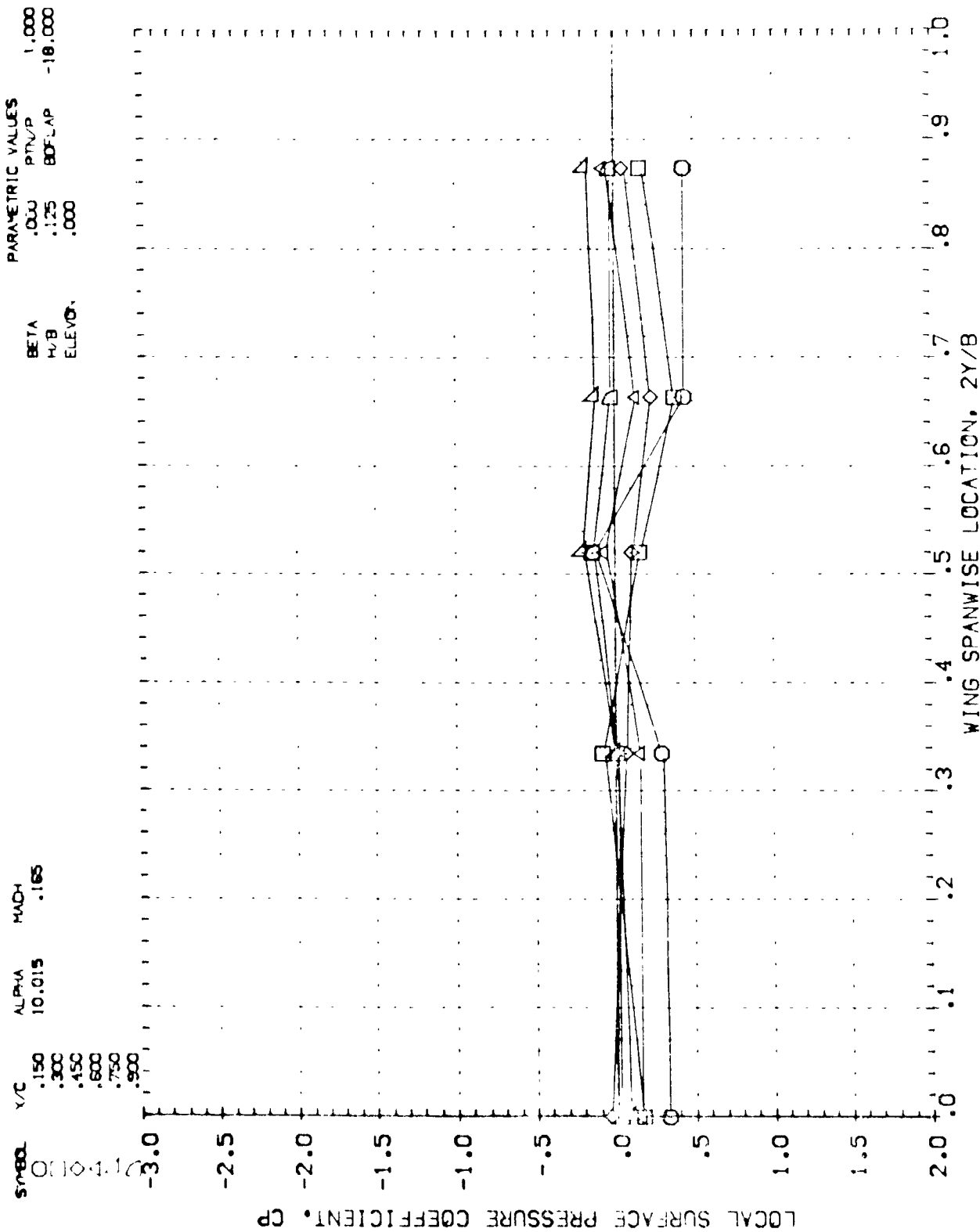


FIG 53 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 0 ELEVON

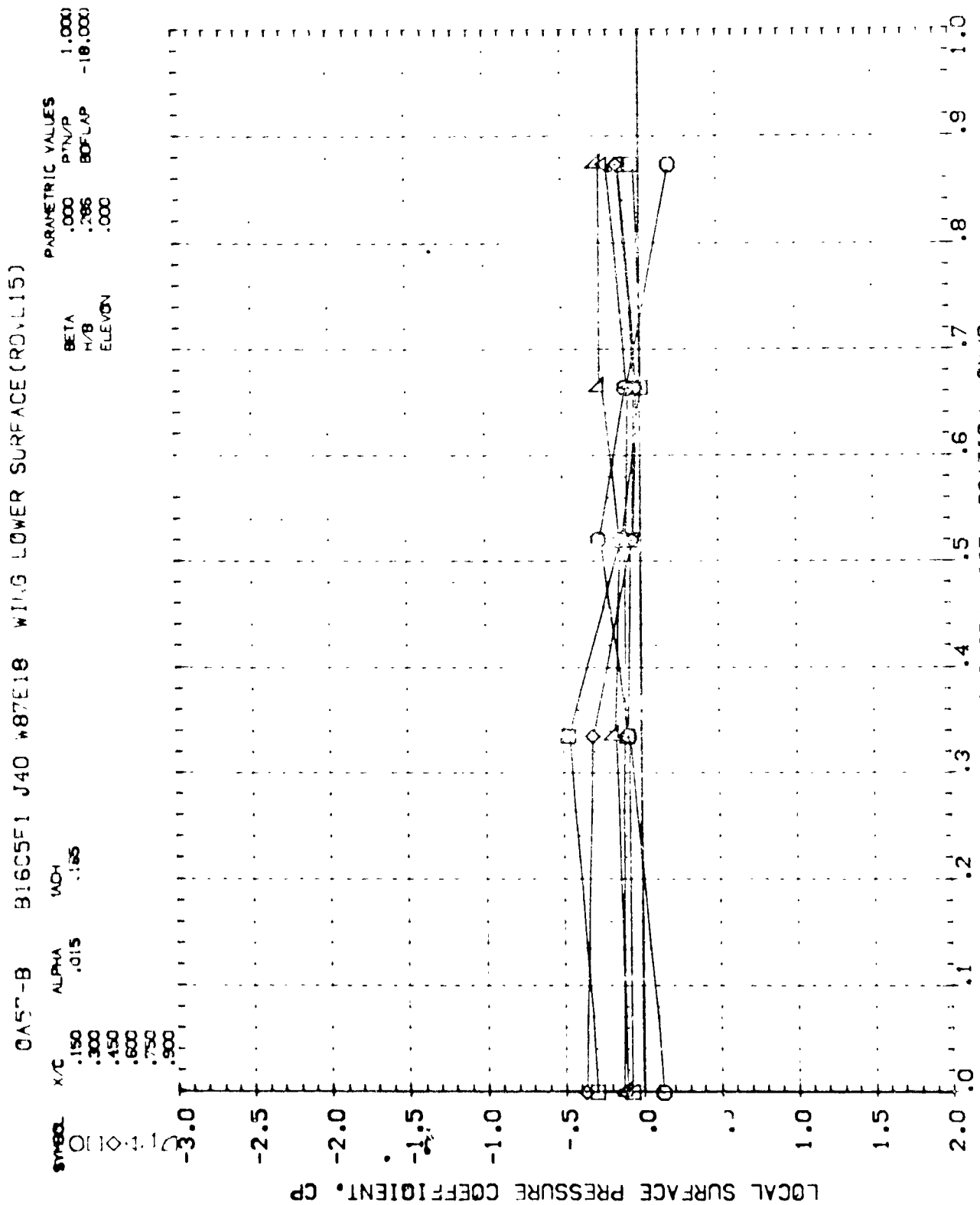


FIG 53 WING LOWER SURFACE PRESSURE SPANWISE VISTR WITH J40: PTN/P=1.0, BDFLAP=-18.000

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL15)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .286 BOFLAP -18.000
 ELEVON .000

ALPHA 10.015
 MACH .125

SYMBOL X/C
 0.150
 0.300
 0.450
 0.600
 0.750
 0.900

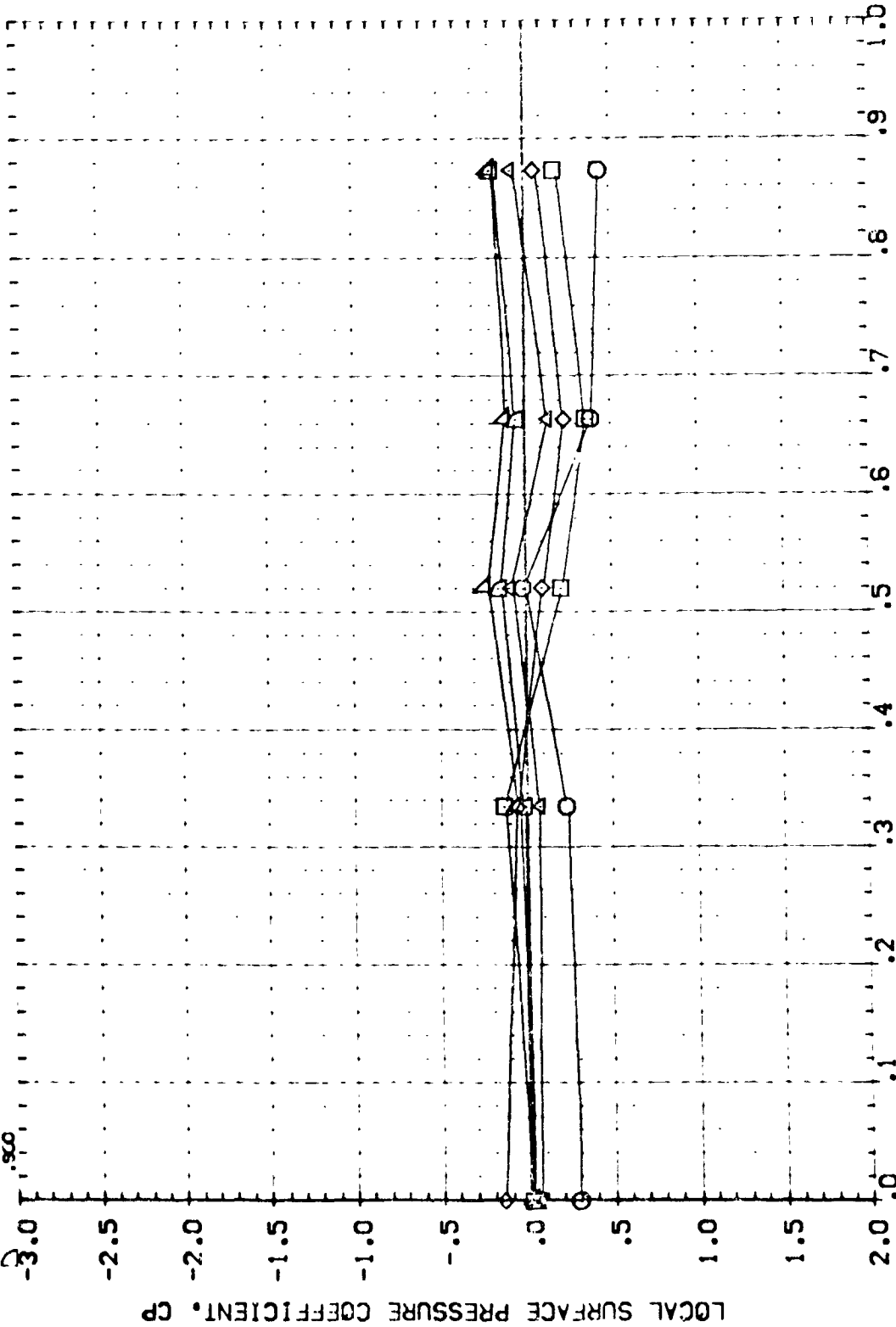


FIG 53 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J40 187E18 WING LOWER SURFACE (RDVL04)

PARAMETER C VALUES
 BETA .000 PTN/P 1.300
 H/B .039 BDFLAP -18.000
 ELEVON .000

ALPHA 10.000 MACH .165
 A/C .150
 .300
 .450
 .600
 .750
 .900

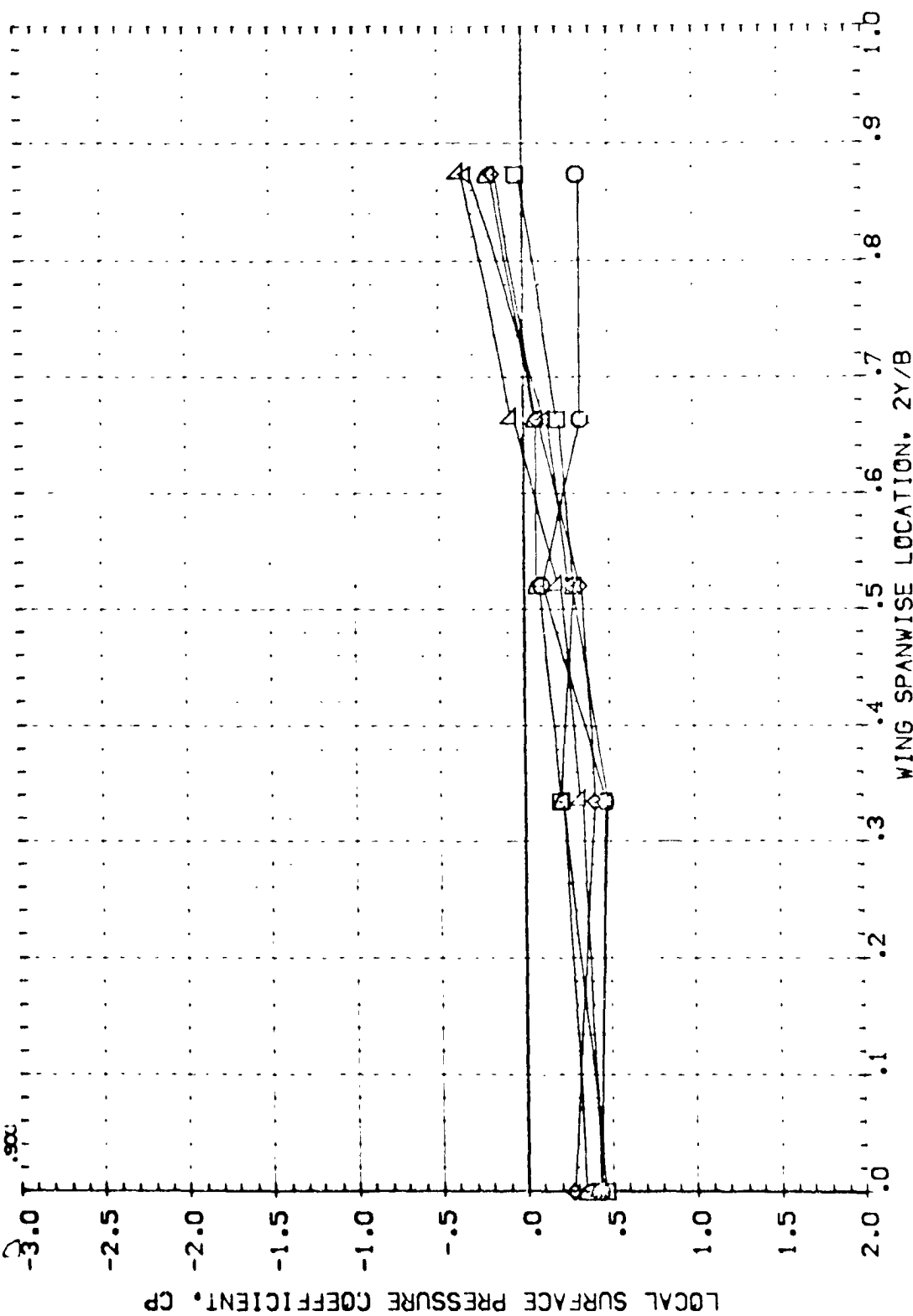


FIG 54 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BOFLAP -19.000
 ELEVON .000

SYMBOL X/C ALPHA MACH
 .150 .005 .165
 .300
 .450
 .600
 .750
 .900

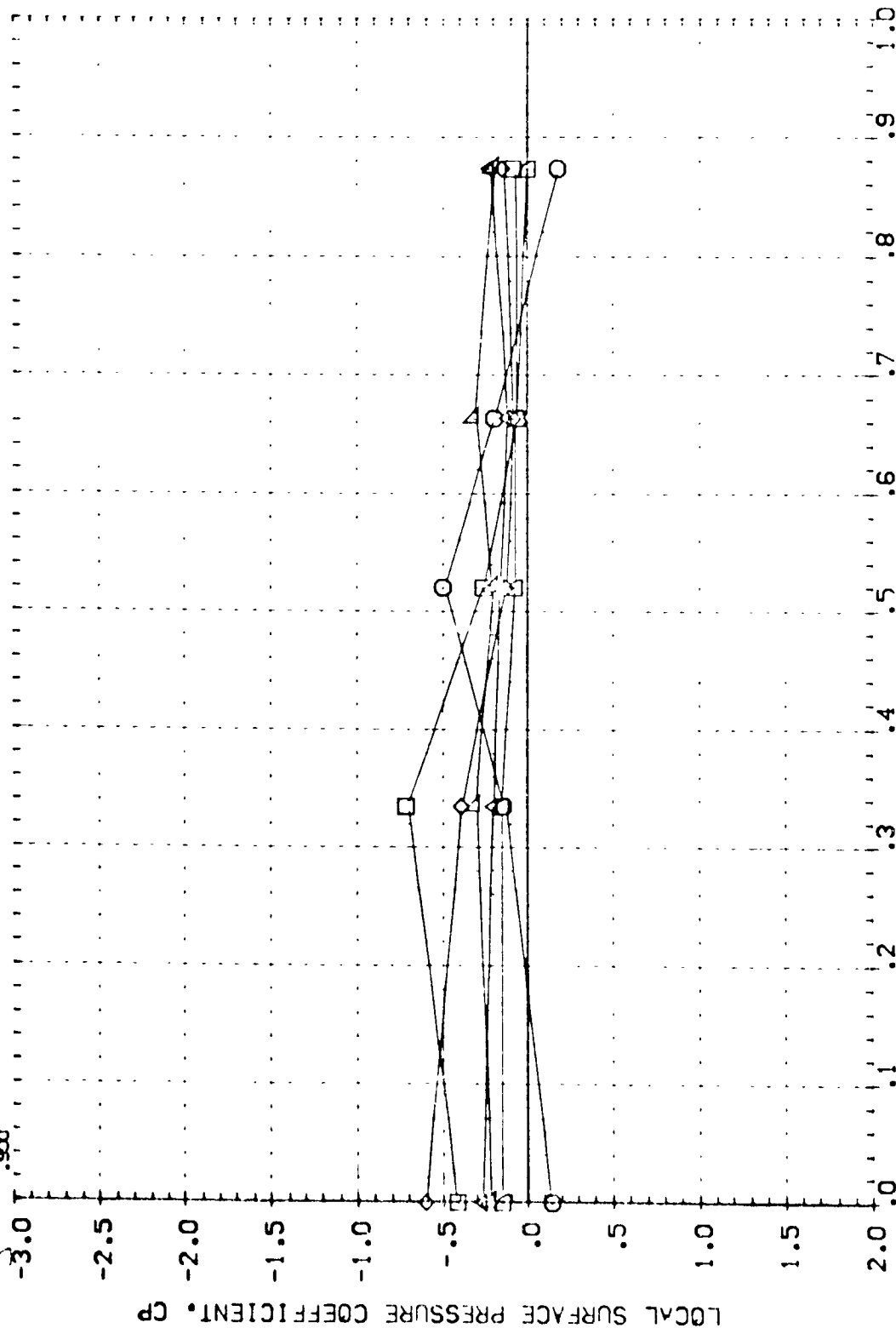


FIG 54 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL07)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BDFLAP -18.000
 ELEVON .000

ALPHA 9.975 MACH .165

SYMBOL X/C
 .150
 .300
 .450
 .600
 .750
 .900

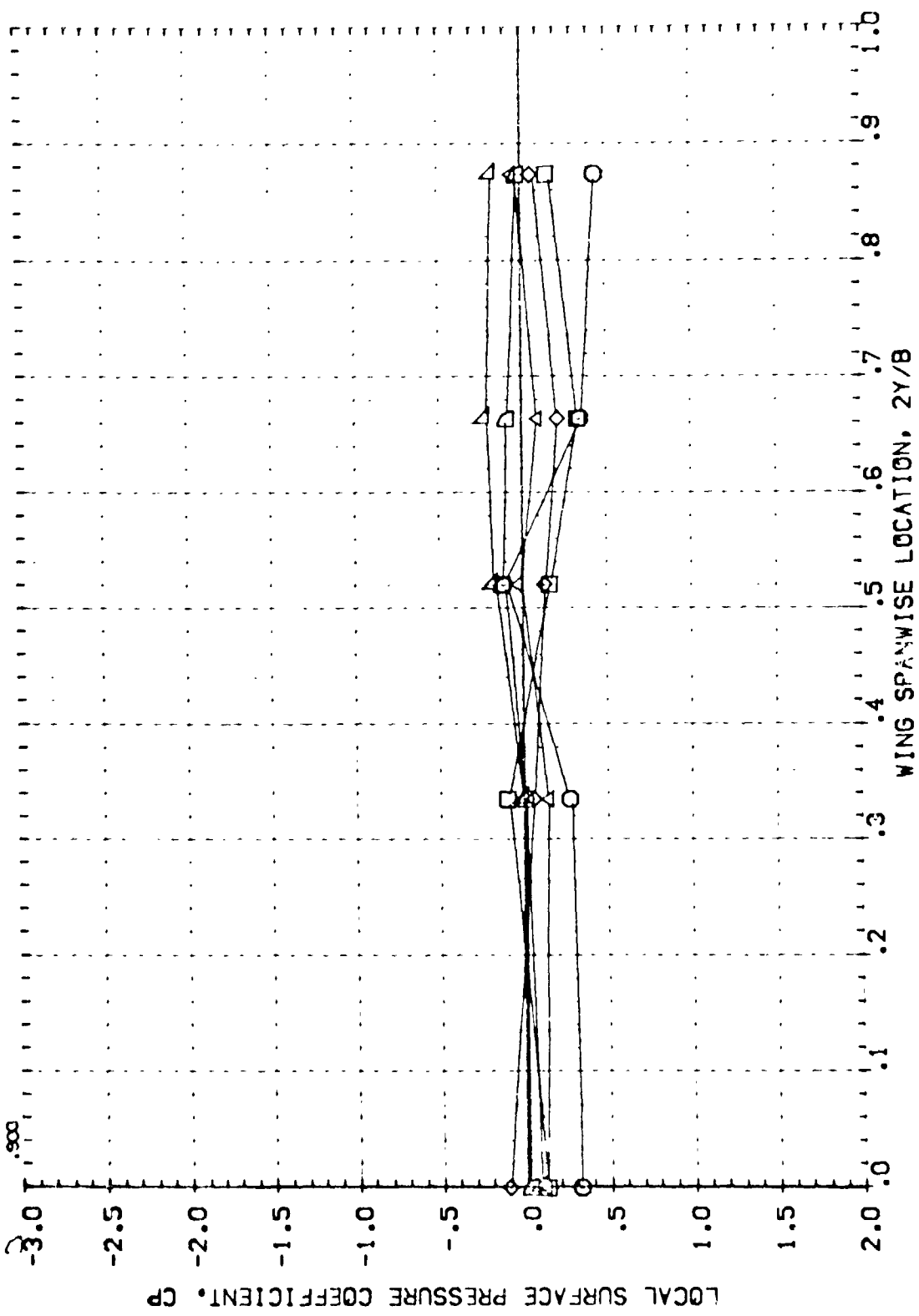
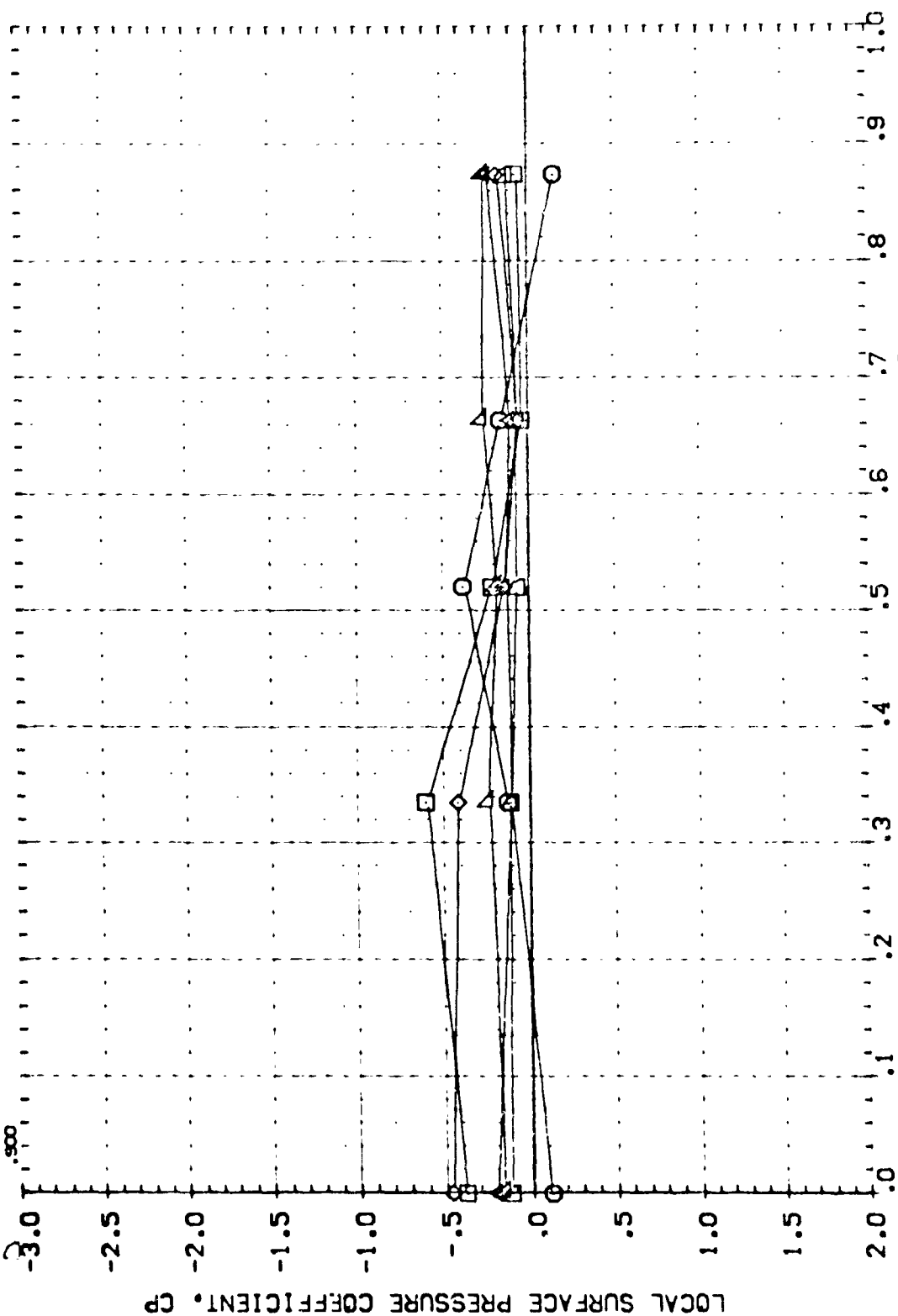


FIG 54 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL17)

PARAMETRIC VALUES
 BETA .000
 PTN/P .1300
 W/B .286
 BOFLAP .000
 ELEVON -18.000

SYMBOL X/C ALPHA MACH
 0 .150
 1 .300
 2 .450
 3 .600
 4 .750
 5 .900



WING SPANWISE LOCATION, 2Y/B

FIG 54 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL17)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .286 BOFLAP -18.000
 ELEVON .000

ALPHA 9.975
 MACH .165

SYMBOL x/c
 ○ .150
 □ .300
 ◇ .450
 △ .600
 △ .750
 △ .900

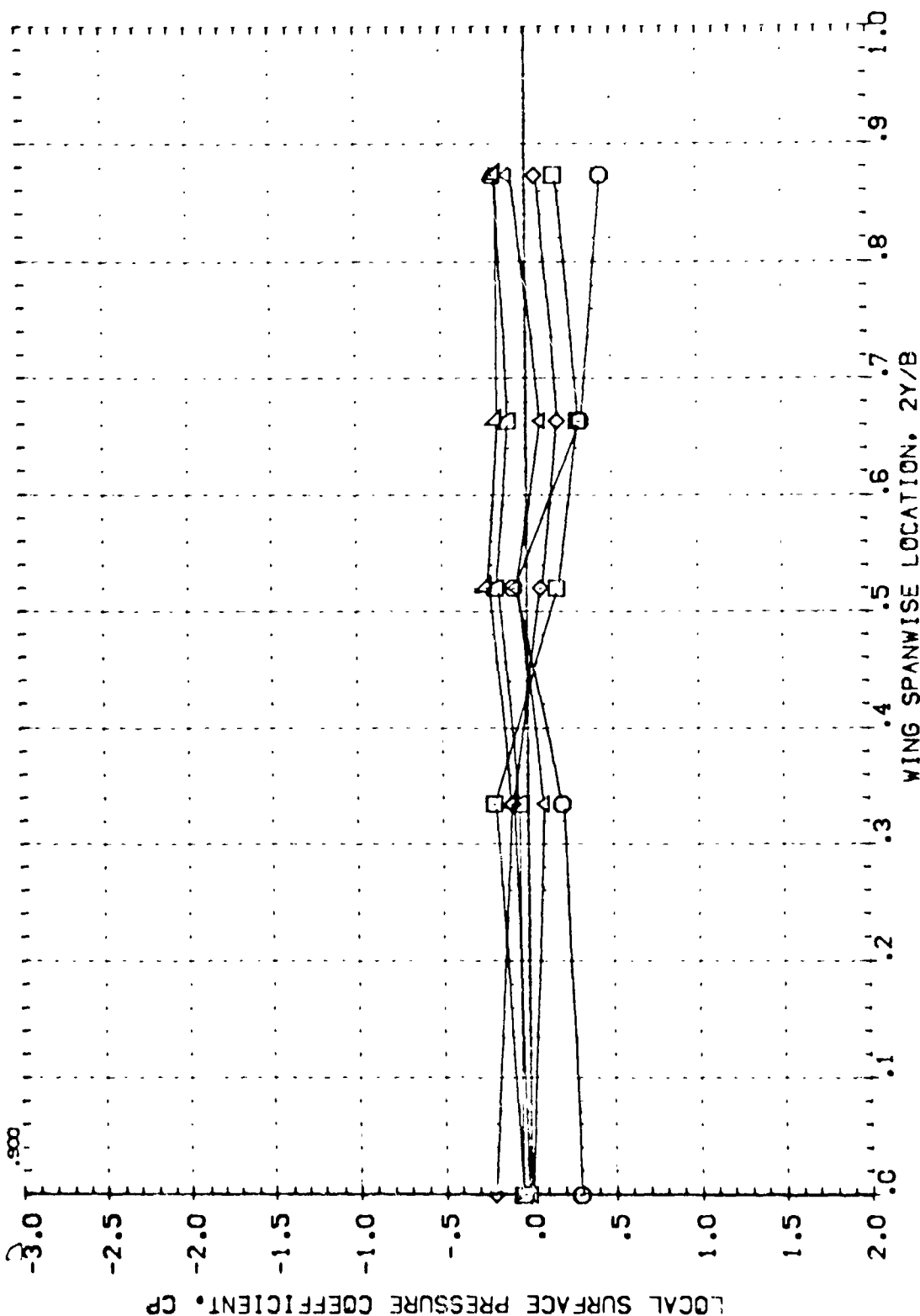


FIG 54 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH $\alpha=40^\circ$, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL05)

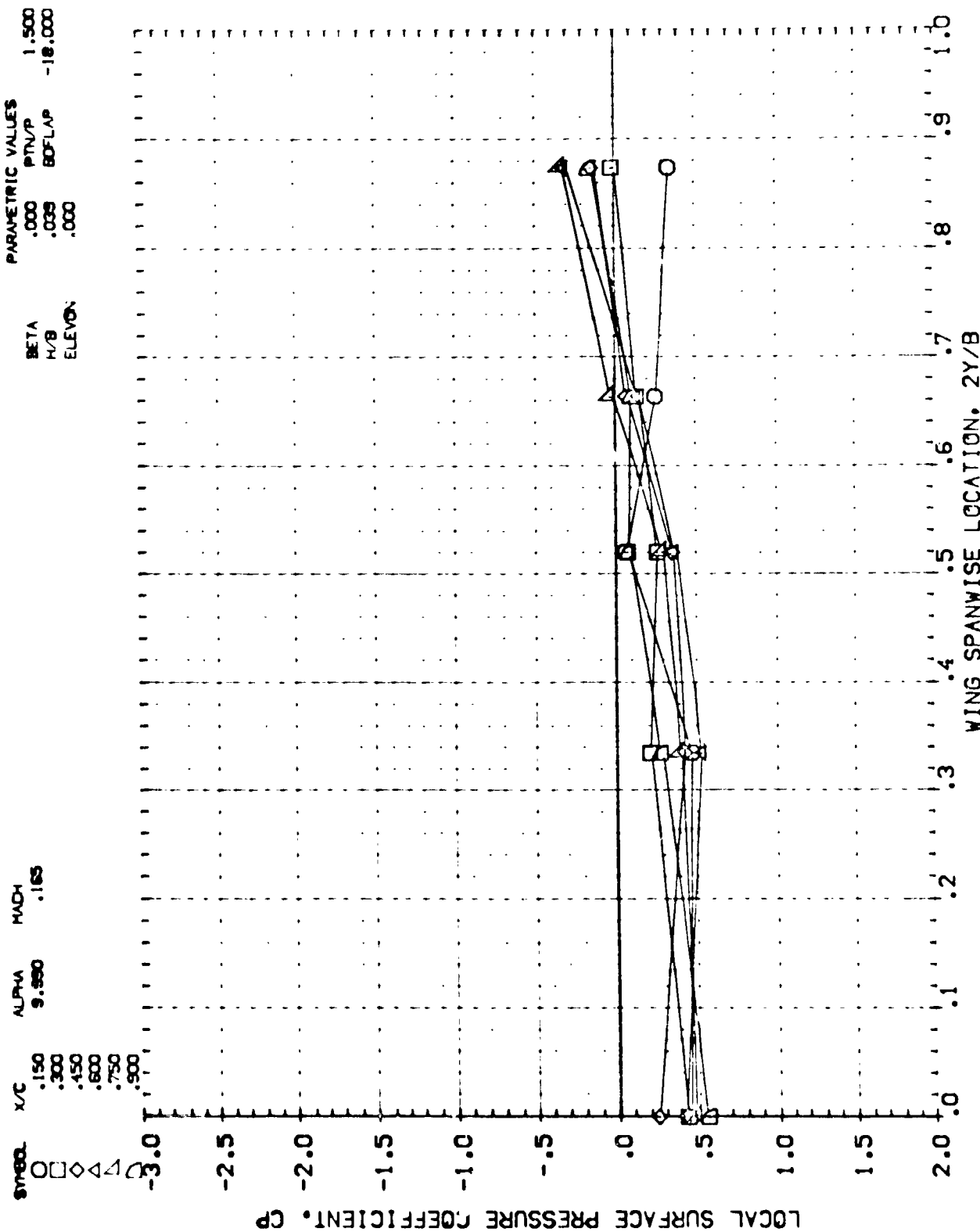


FIG 55 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.5, 0 ELEVON

0457-B B16C5F1 J40 #87E18 WING LOWER SURFACE (RDVL08)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .125 BOFLAP -18.000
 ELEVON .000

SYMBOL X/C ALPHA MACH
 .150 .000 .185
 .300
 .450
 .600
 .750
 .900

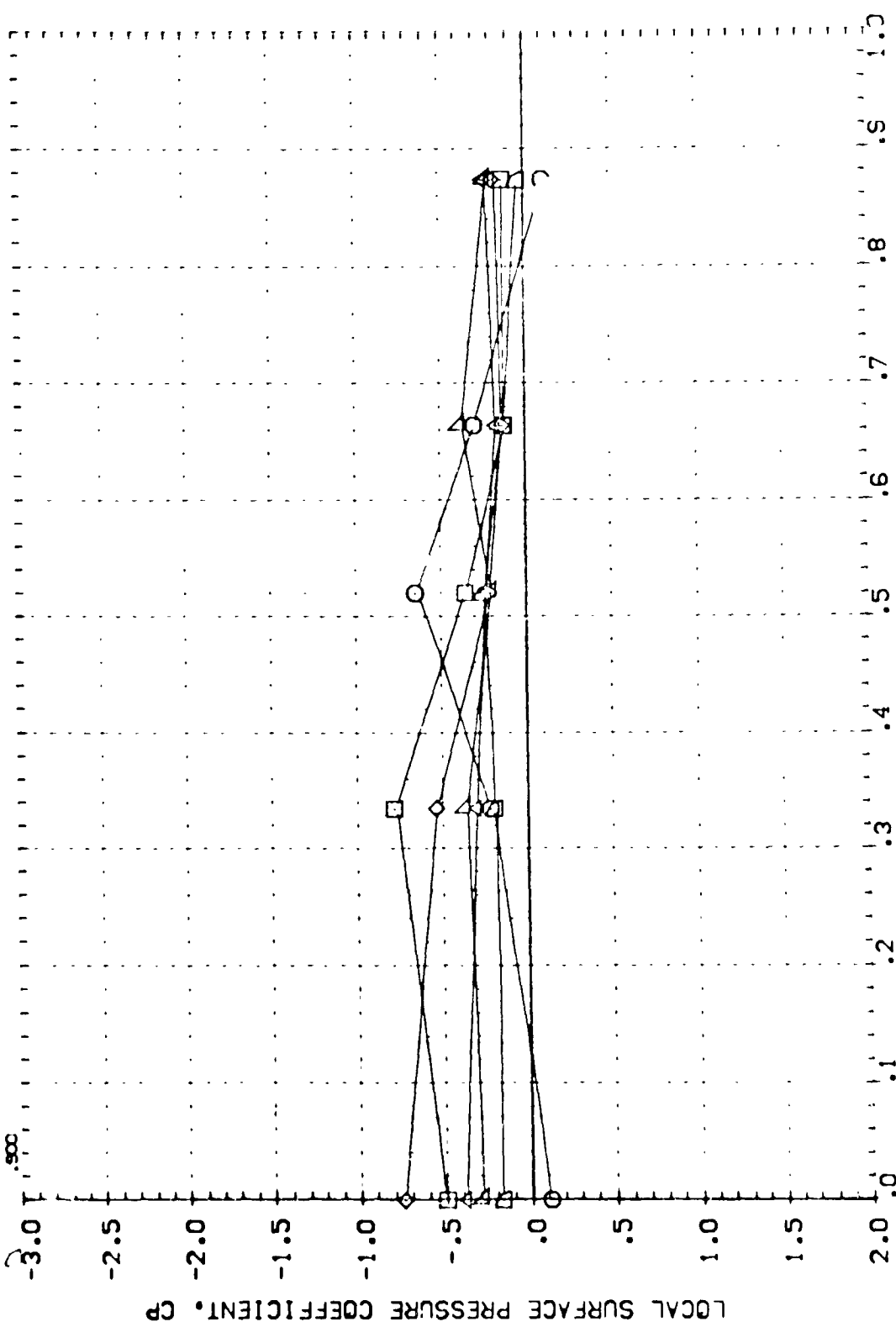


FIG 55 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.5, 0 ELEVON
 WING SPANWISE LOCATION, 2Y/B
 PAGE 247

0457-B 81605F1 J40 #87E:8 WING LOWER SURFACE (RDVL08)

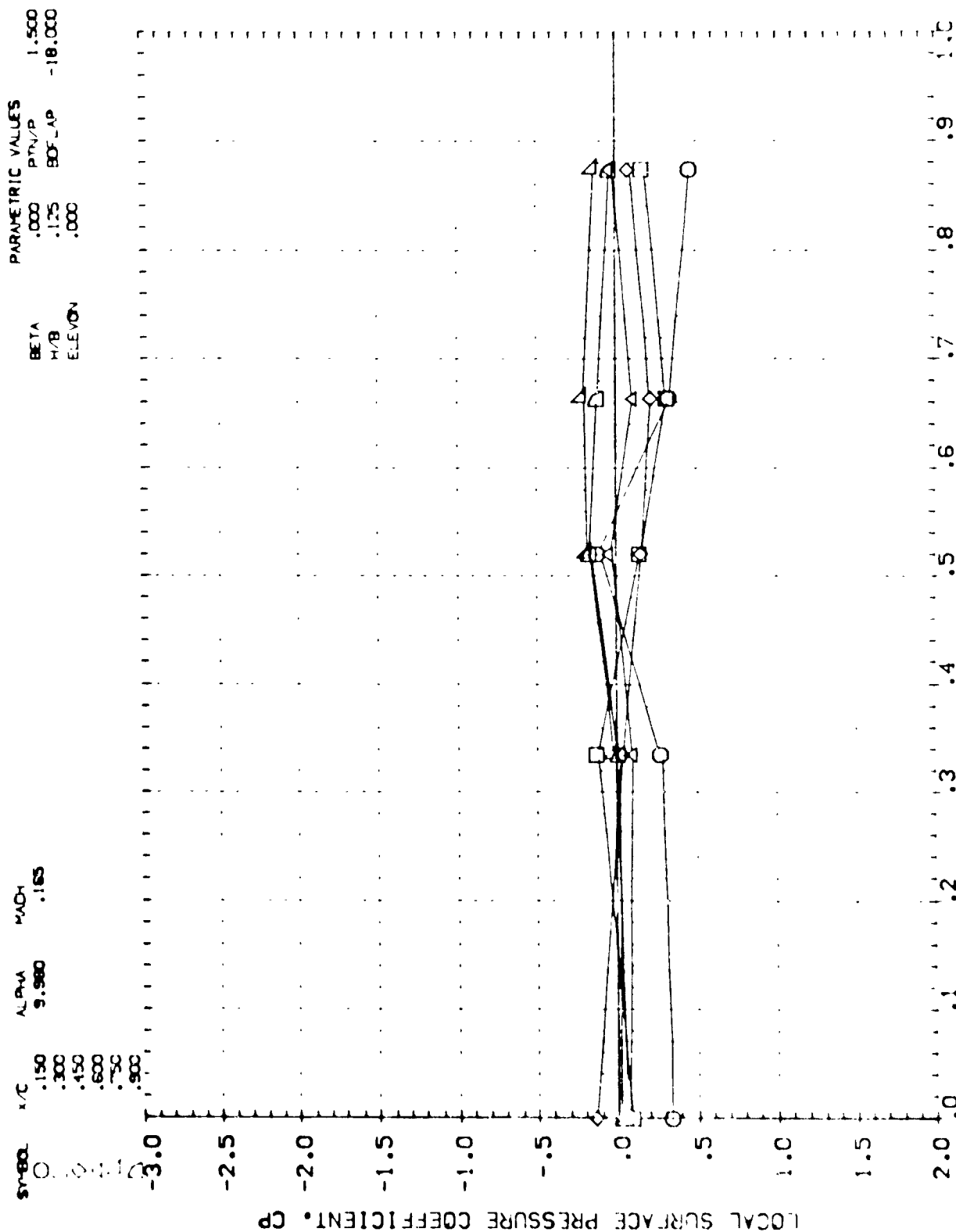


FIG 55 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P = 0.125, BETA = 0.000, MACH = 0.165

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL16)

| | | |
|-------|--------|-------------------|
| ALPHA | BETA | PARAMETRIC VALUES |
| 0.015 | H/B | PTN/P |
| 0.165 | ELEVON | BDFLAP |
| | | 1.500 |
| | | -18.000 |

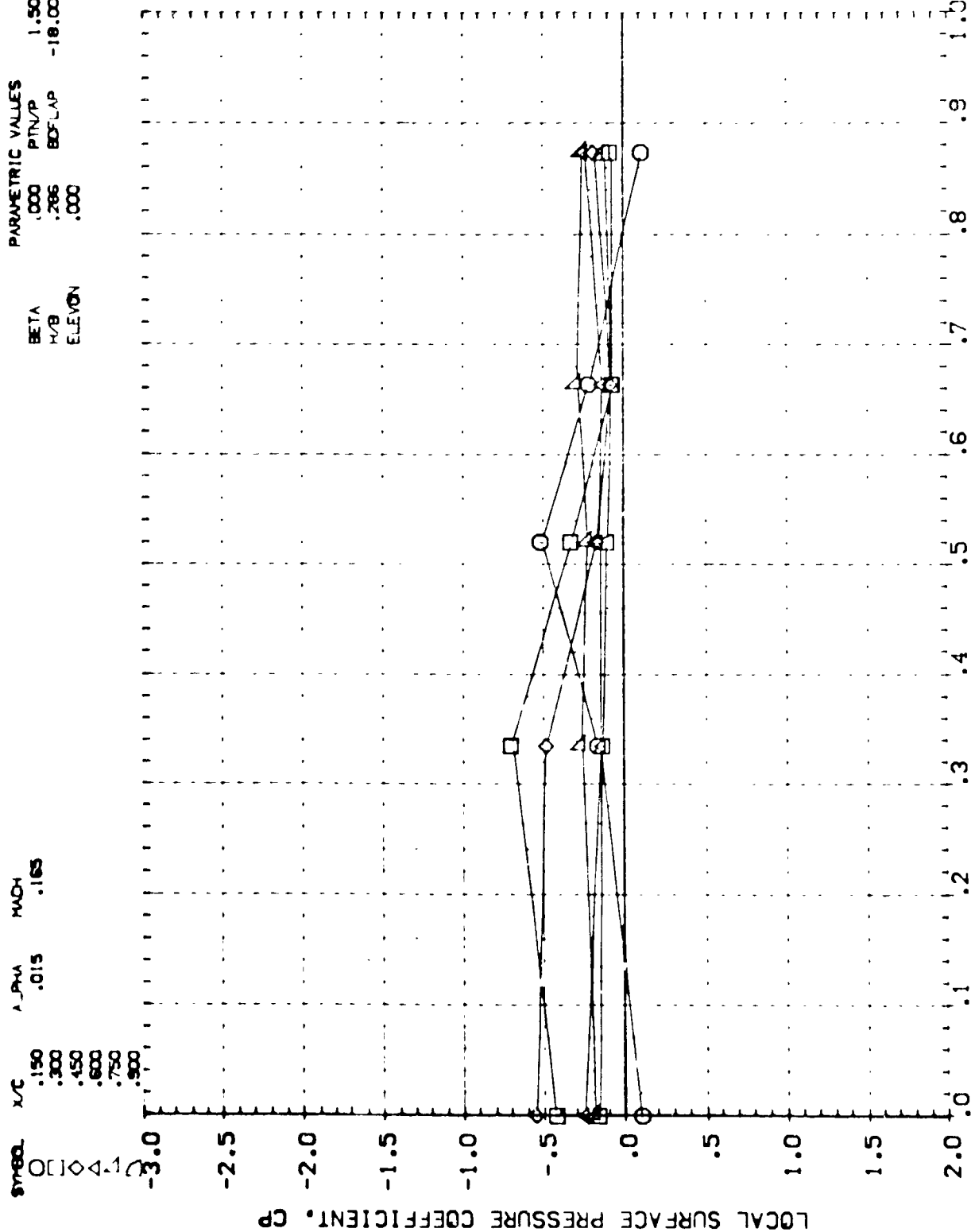


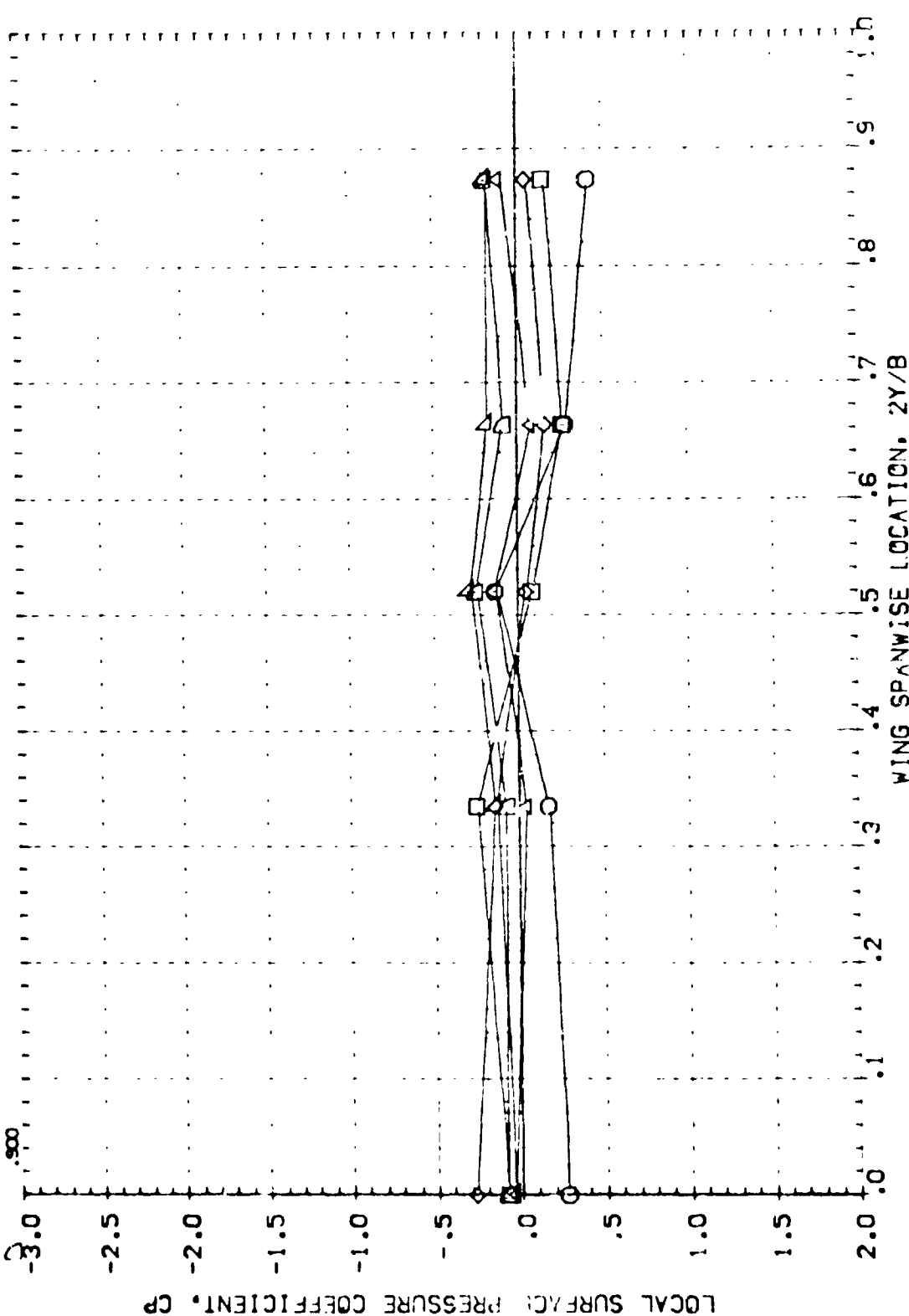
FIG 55 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RD "L16)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 1/8 .286 BOFLA' -10.000
 ELEVON .000

ALPHA 10.000
 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, 2Y/B

FIG 55 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL33)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 W/B .039 BDF LAP -18.000
 ELEVON 15.000

ALPHA 10.000
 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900

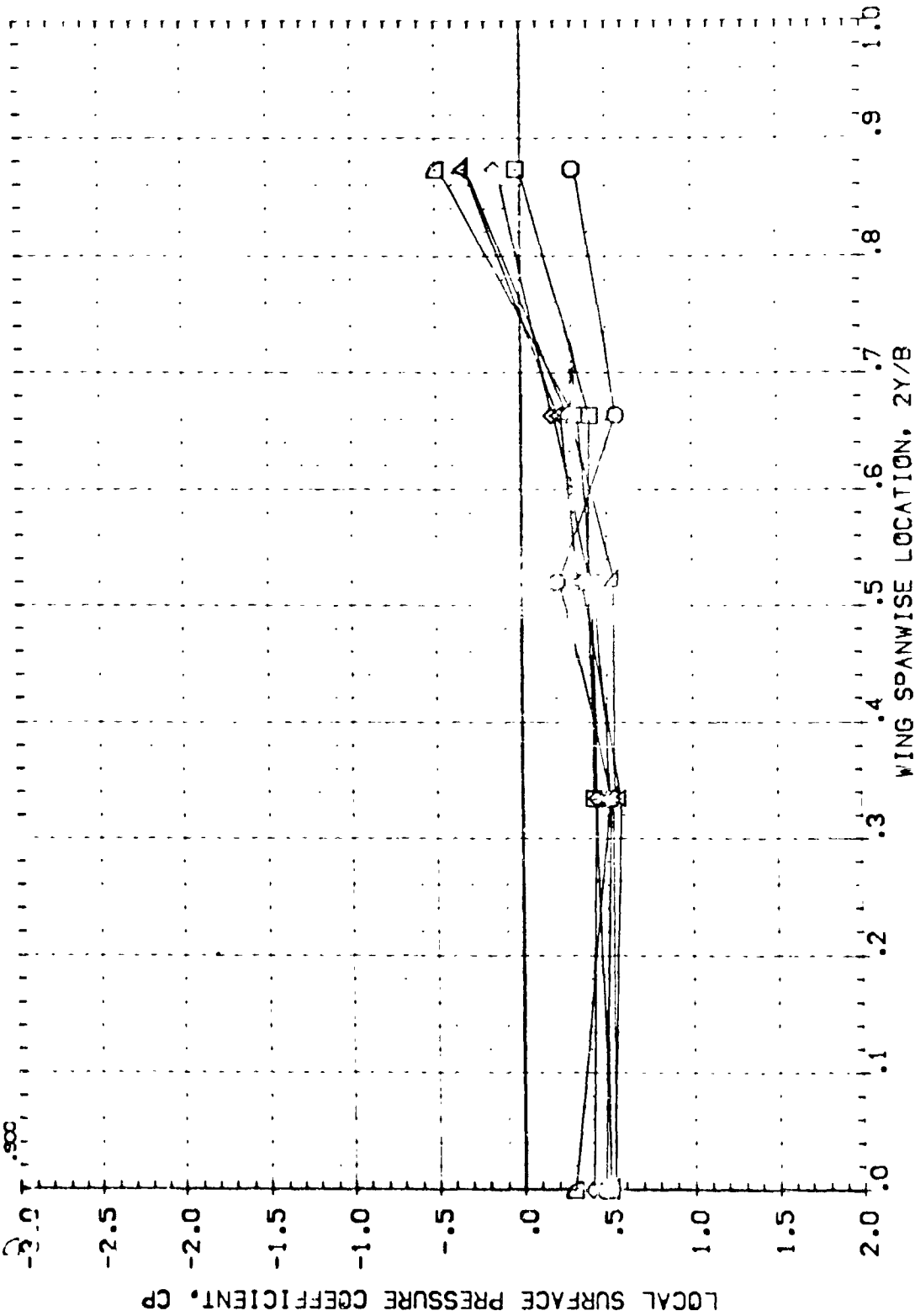


FIG 56 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL30)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .125 BOFLAP -18.000
 ELEVON 15.000

ALPHA -.020 MACH .195

SYMBOL X/C
 .150
 .300
 .450
 .600
 .750
 .900

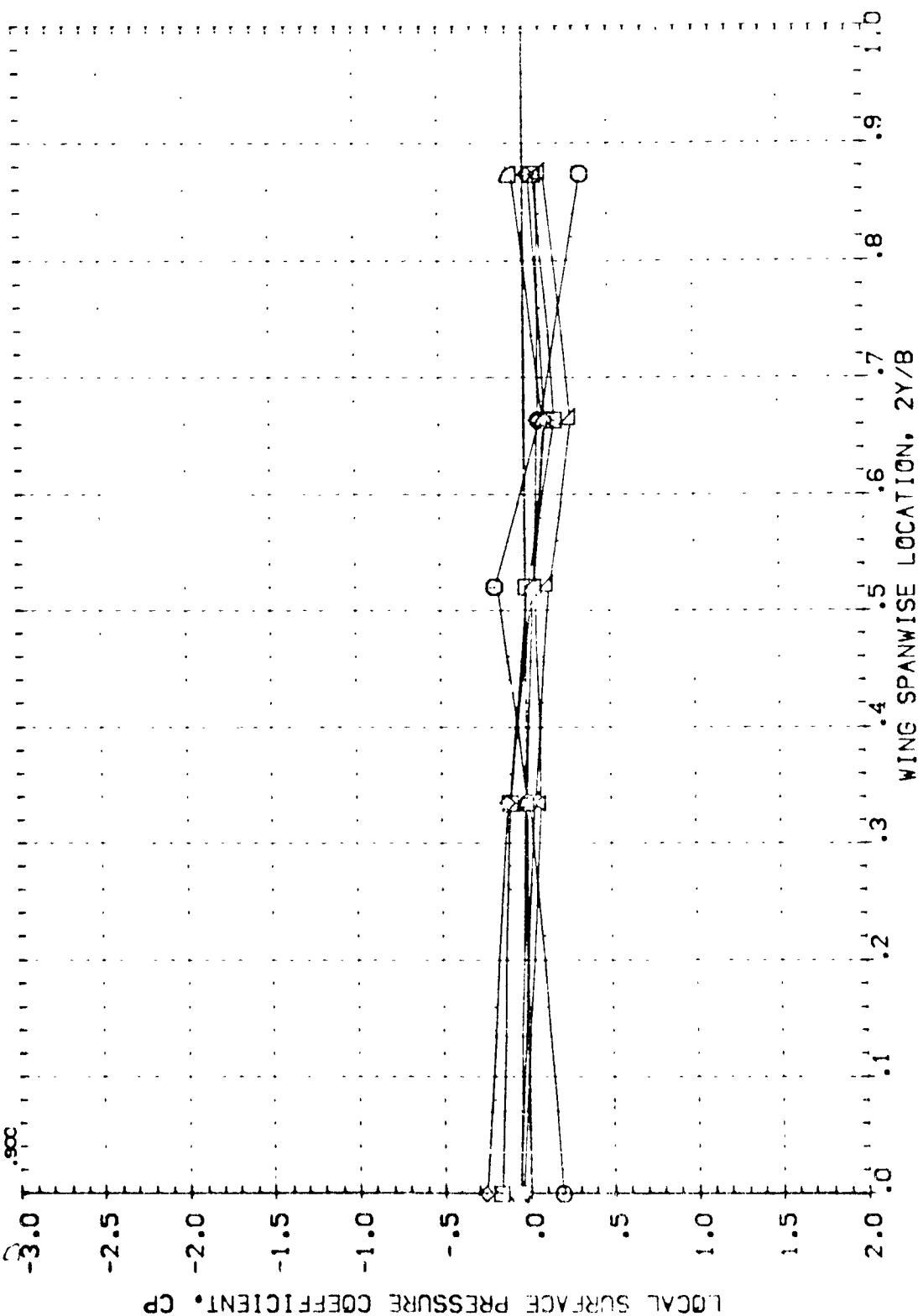


FIG 56 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 15 ELEVON

CAS7-B 316C5F1 J40 W87E18 WING LOWER SURFACE (RDVL30)

PARAMETER C VALUES
 BETA .000 PTN/P 1.000
 H/B .125 BDFLAP -18.000
 ELEVON 15.000

ALPHA 9.985
 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900

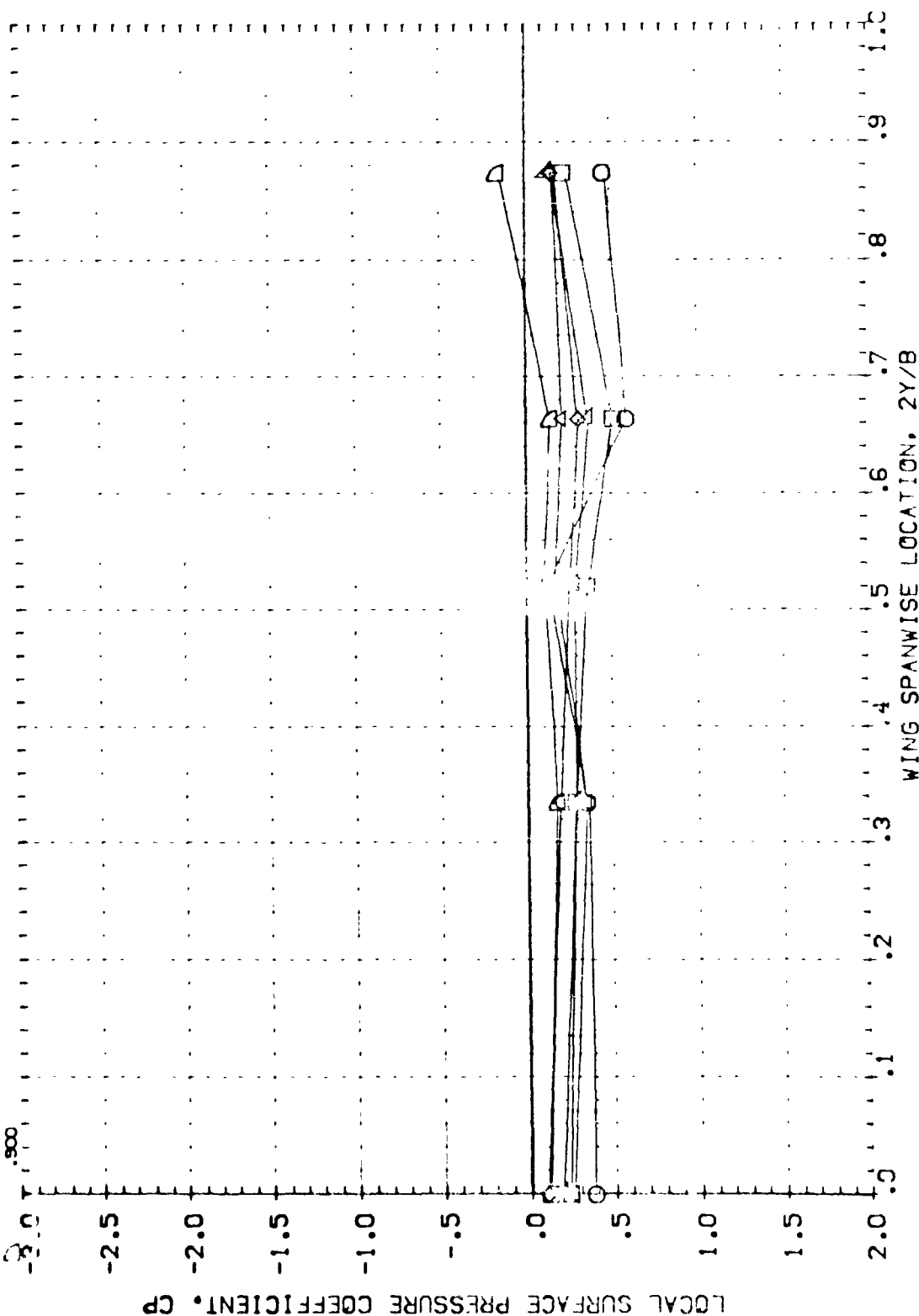


FIG 56 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION J40, PTN/P=1.0, 15 ELEVON

CA57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL35)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .206 BOFLAP -10.000
 ELEVON 15.000

SYMBOL X/C ALPHA MACH
 .150
 .300
 .450
 .600
 .750
 .900

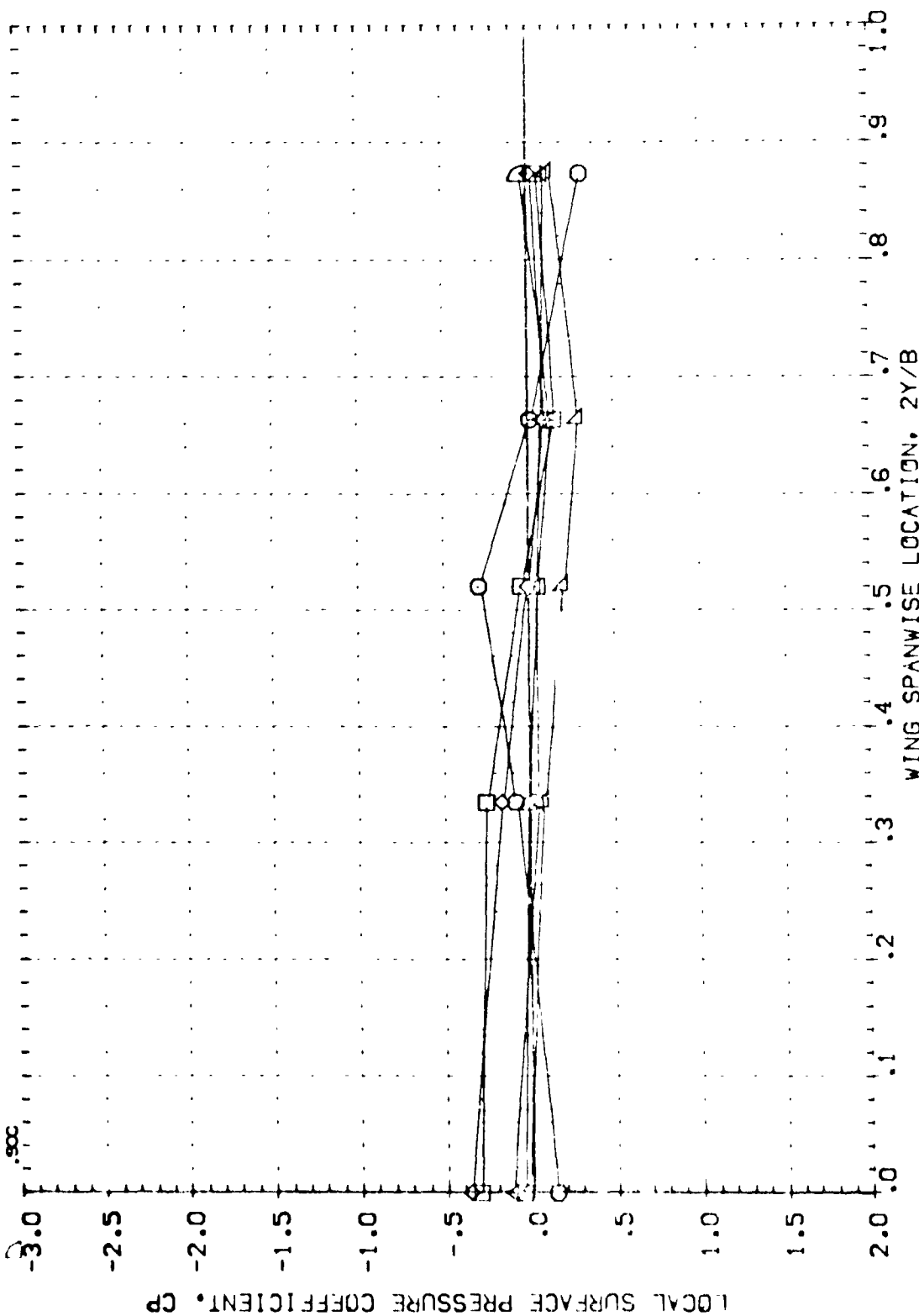


FIG 56 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.0, 15 ELEVON

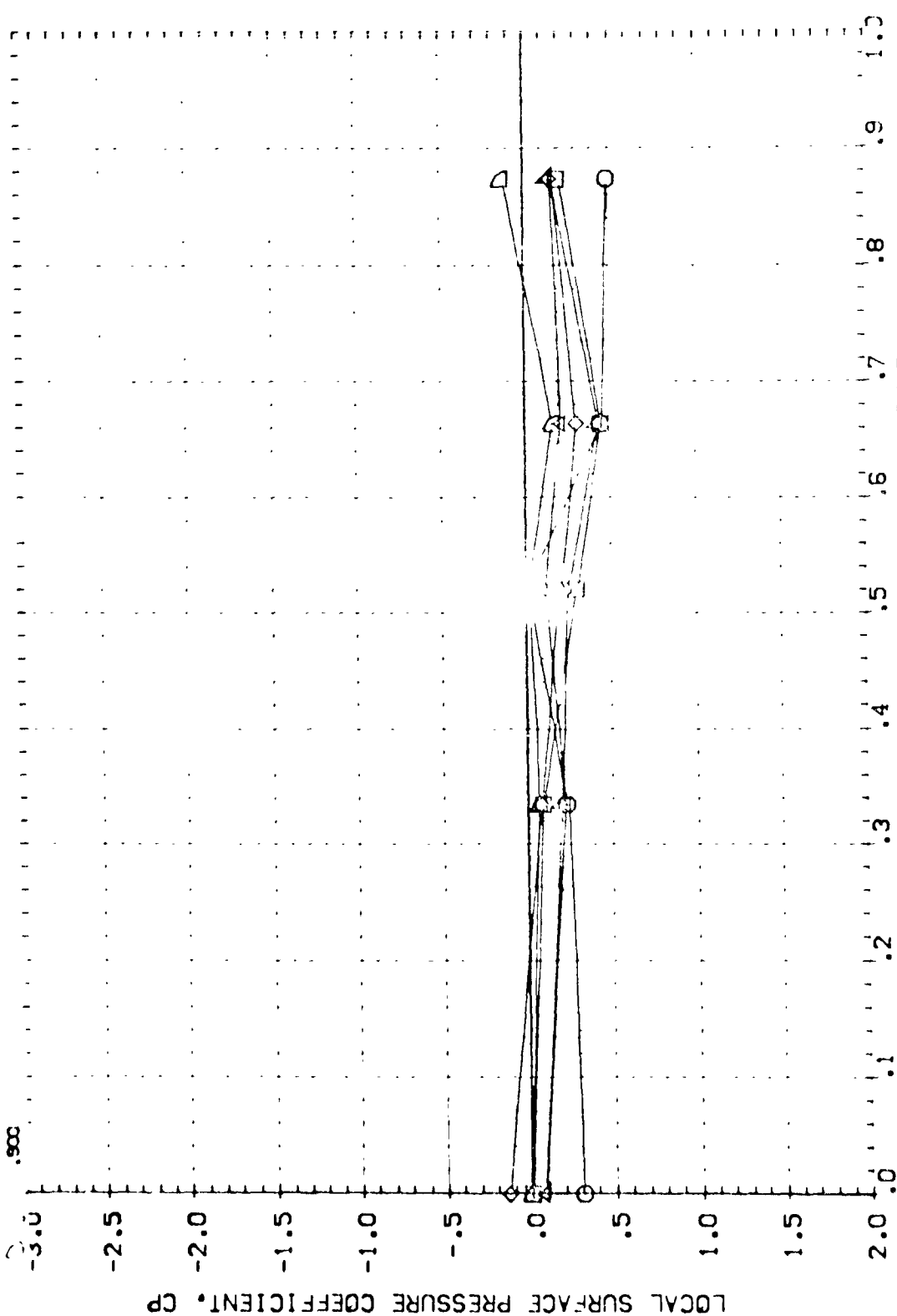
0A57-B 3:605F J40 W87E18 WING LOWER SURFACE (RDVL35)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .236 BOFLAP -18.000
 ELE/D 15.000

ALPHA 9.985
 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900

SYMBOL
 O

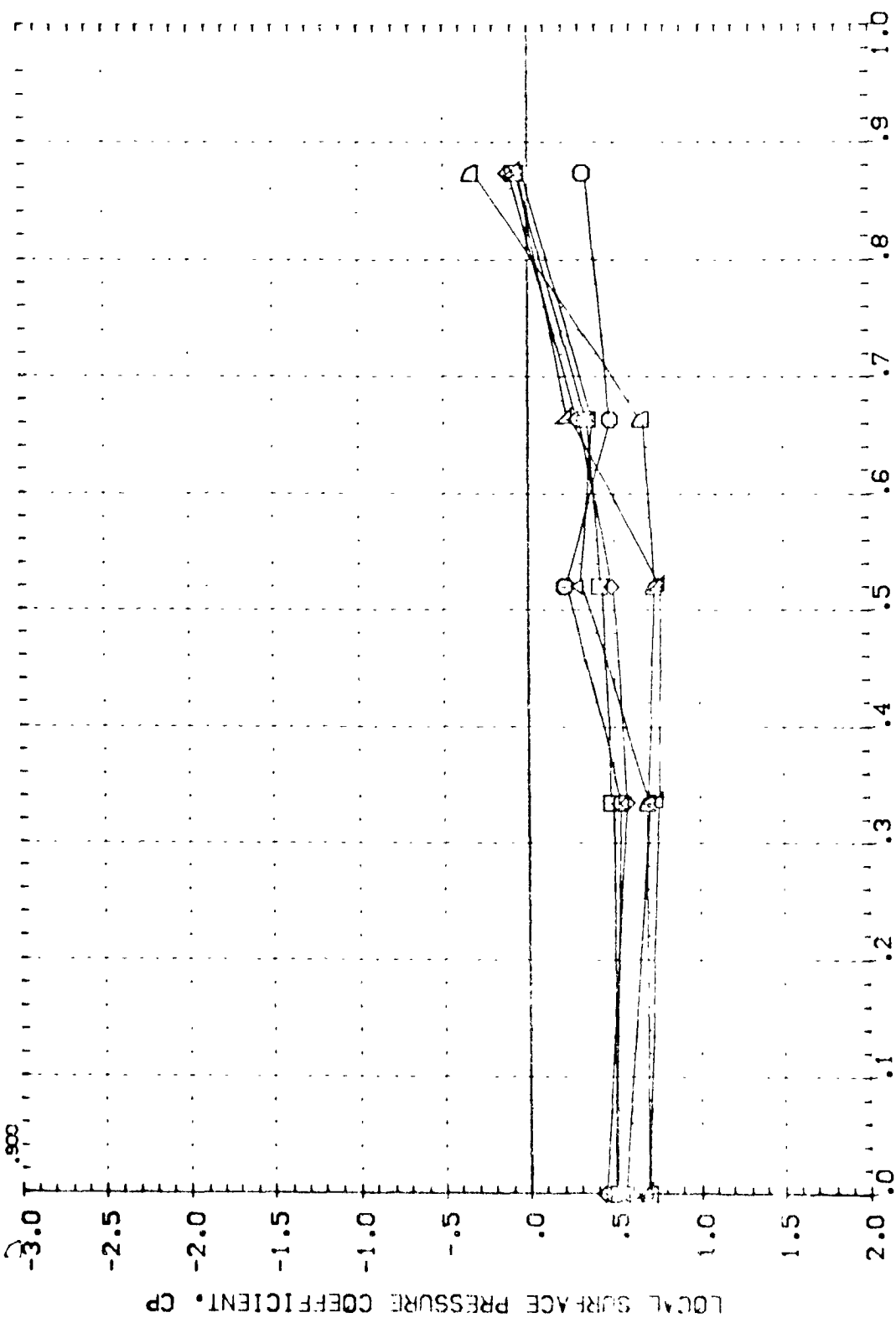


WING SPANWISE LOCATION, 2Y/B

FIG 56 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.0, 15.0, 30.0

PARAMETRIC VALUES
BETA .000 PTN/P 1.300
H/B .039 BOFLAP -10.000
ELEVON 15.000

SYMBOL X/C ALPHA MACH
.150 9.990 .165
.300
.450
.600
.750
.900



WING SPANWISE LOCATION, 2Y/B

FIG 57 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.3, 15 ELEVON

0A57-B 916C5F1 J40 W87E18 WING LOWER SURFACE (RDVL29)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 W/B .125 BDFLAP -18.000
 ELEVON 15.000

SYMBOL X/C ALPHA MACH
 .150
 .300
 .450
 .600
 .750
 .900

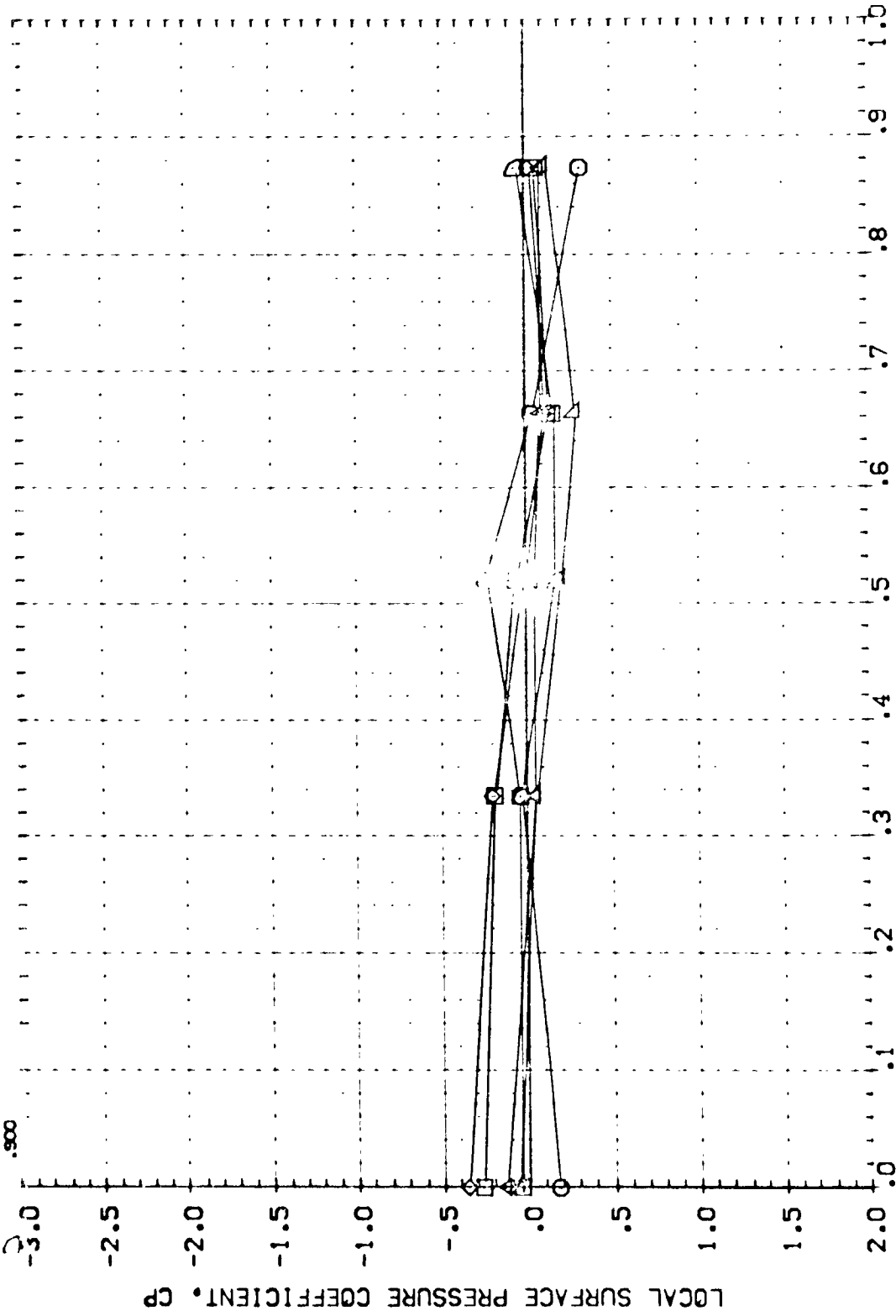


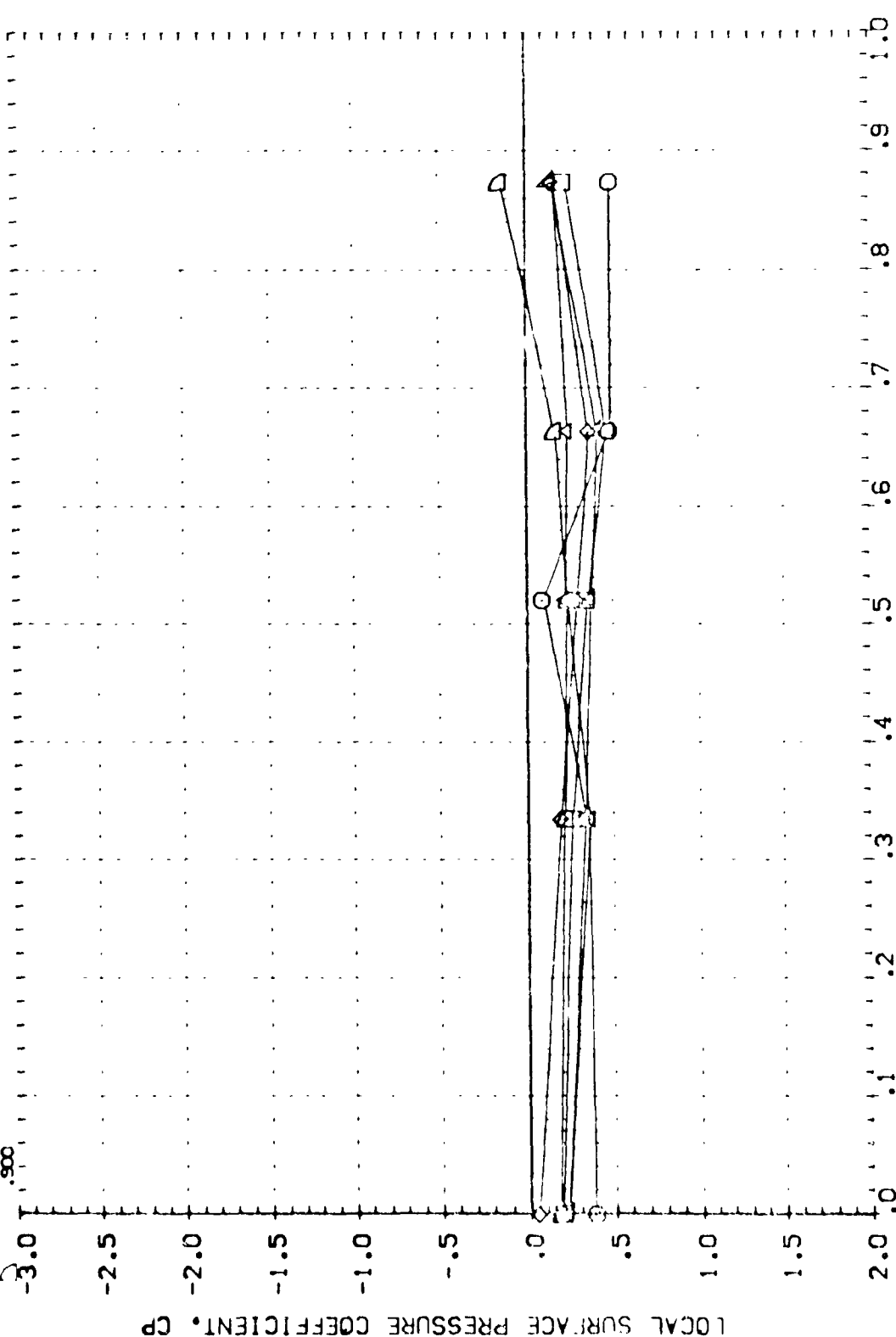
FIG 57 WING LOWER SURFACE PRESSURE SPANWISE DISTP WITH J40, PTN/P=1.3, 15 ELEVON

CA57-B 8:6C5F1 J40 W87E18 WING LOWER SURFACE (RDVL29)

PARAMETRIC VALUES
 BETA .000 PTV/P 1.300
 H/B .125 BOFLAP -16.000
 ELEVON 15.000

ALPHA 9.965
 MACH .165

SYMBOL X/C
 .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, $2Y/B$

FIG 57 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTV/P=1.3, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL35)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .286 BOFLAP -18.000
 ELEVON 15.000

ALPHA -0.020 MACH .165

SYMBOL X/C
 1.000
 1.150
 1.300
 1.450
 1.600
 1.750
 1.900

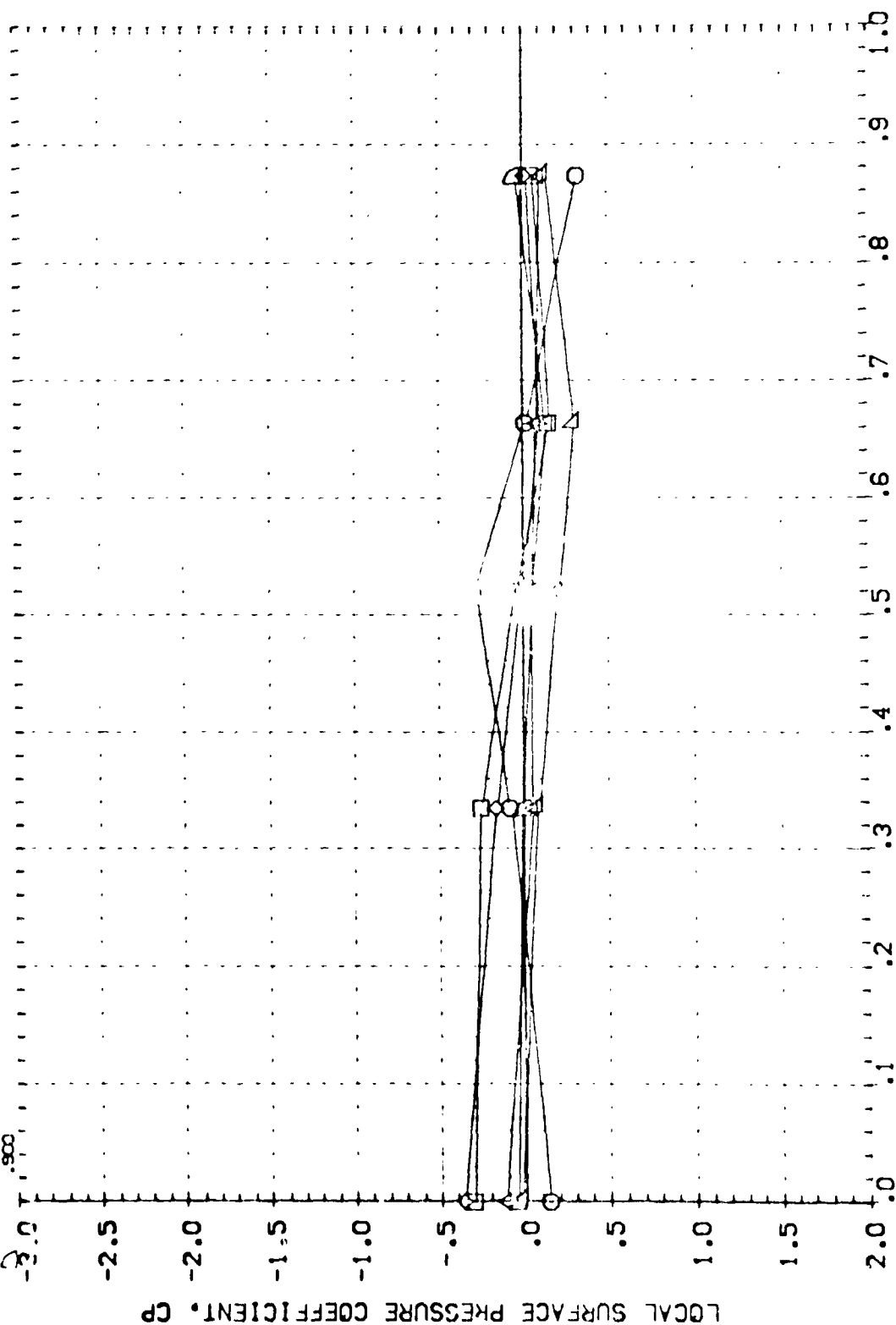
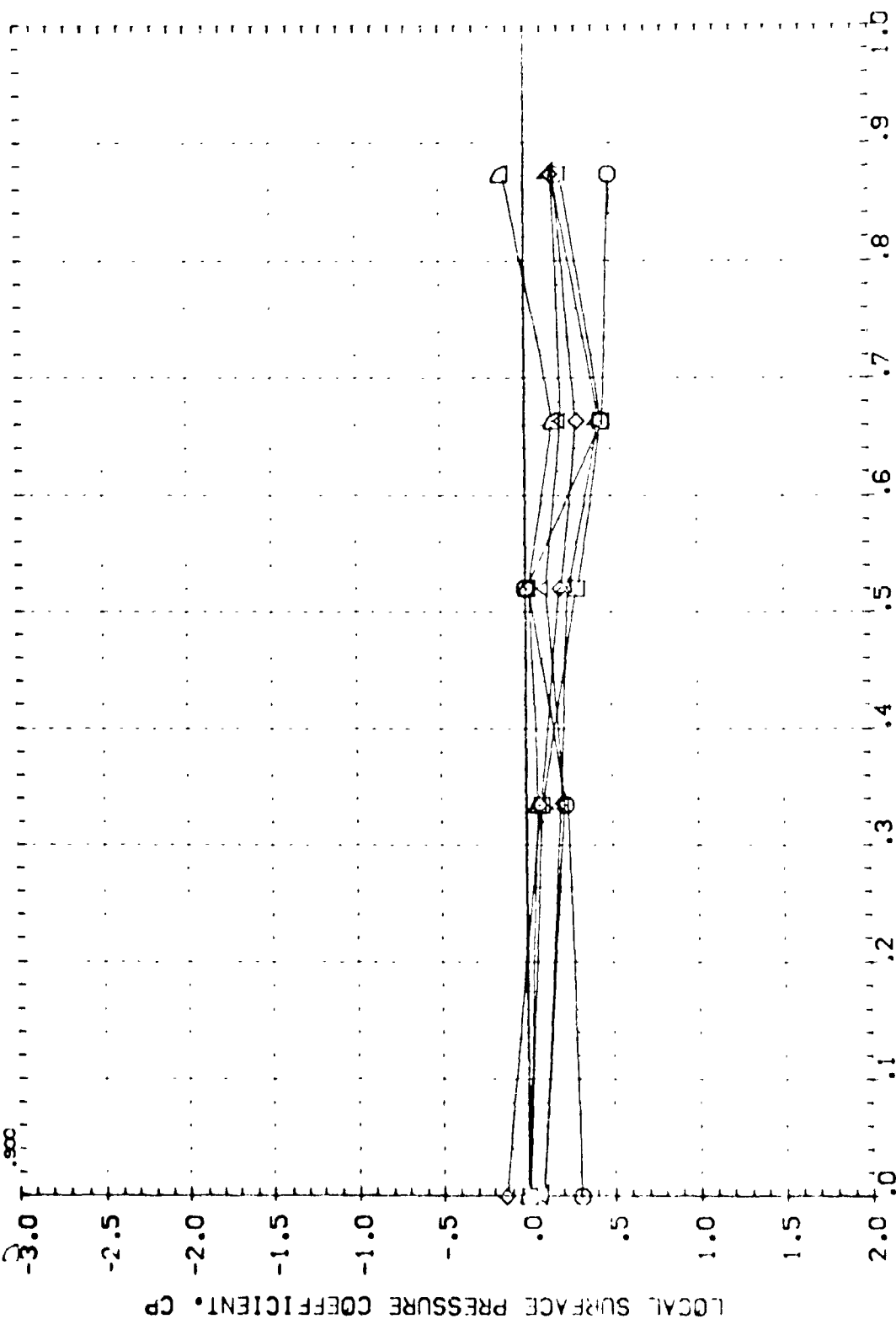


FIG 57 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.3, 15 ELEVON

0457-B B1605F1 J40 W87E18 WING LOWER SURFACE (ROVL35)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .286 BOFLAP -18.000
 ELEVON 15.000

SYMBOL X/C ALPHA MACH
 .150 9.985 .185
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, $2Y/B$

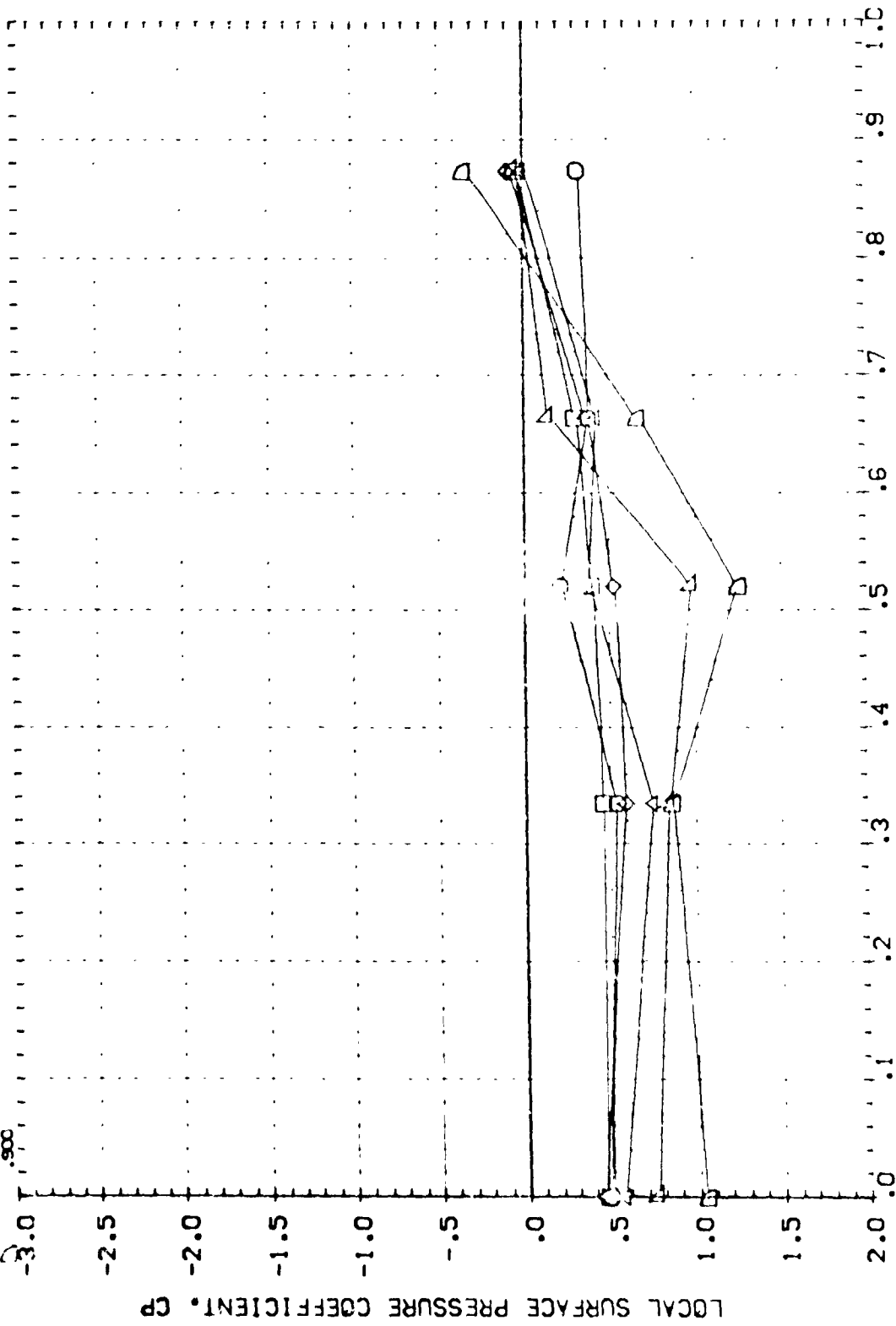
FIG 57 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, $PTN/P=1.3, 15$ ELEVON

GA57-B 31605F1 J40 W87E18 WING LOWER SURFACE (RDVL31)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .039 BOFLAP -18.000
 ELEVON 15.000

ALPHA 10.010
 MACH .165

SYMBOL x/c
 ○ .150
 ◇ .300
 △ .450
 □ .600
 × .750
 + .900



WING SPANWISE LOCATION, 2Y/B

FIG 58 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J40, PTN/P=1.5, 1.5 ELEVO

0457-3 816C5F: J40 W87E18 WING LOWER SURFACE (RDVL28)

PARAMETRIC VALUES
 BETA β 1.500
 M/B 1.25
 ELEVON 15.000
 90FLAP -10.000

ALPHA α .020
 MACH .165
 X/C .150
 .300
 .450
 .600
 .750
 .900

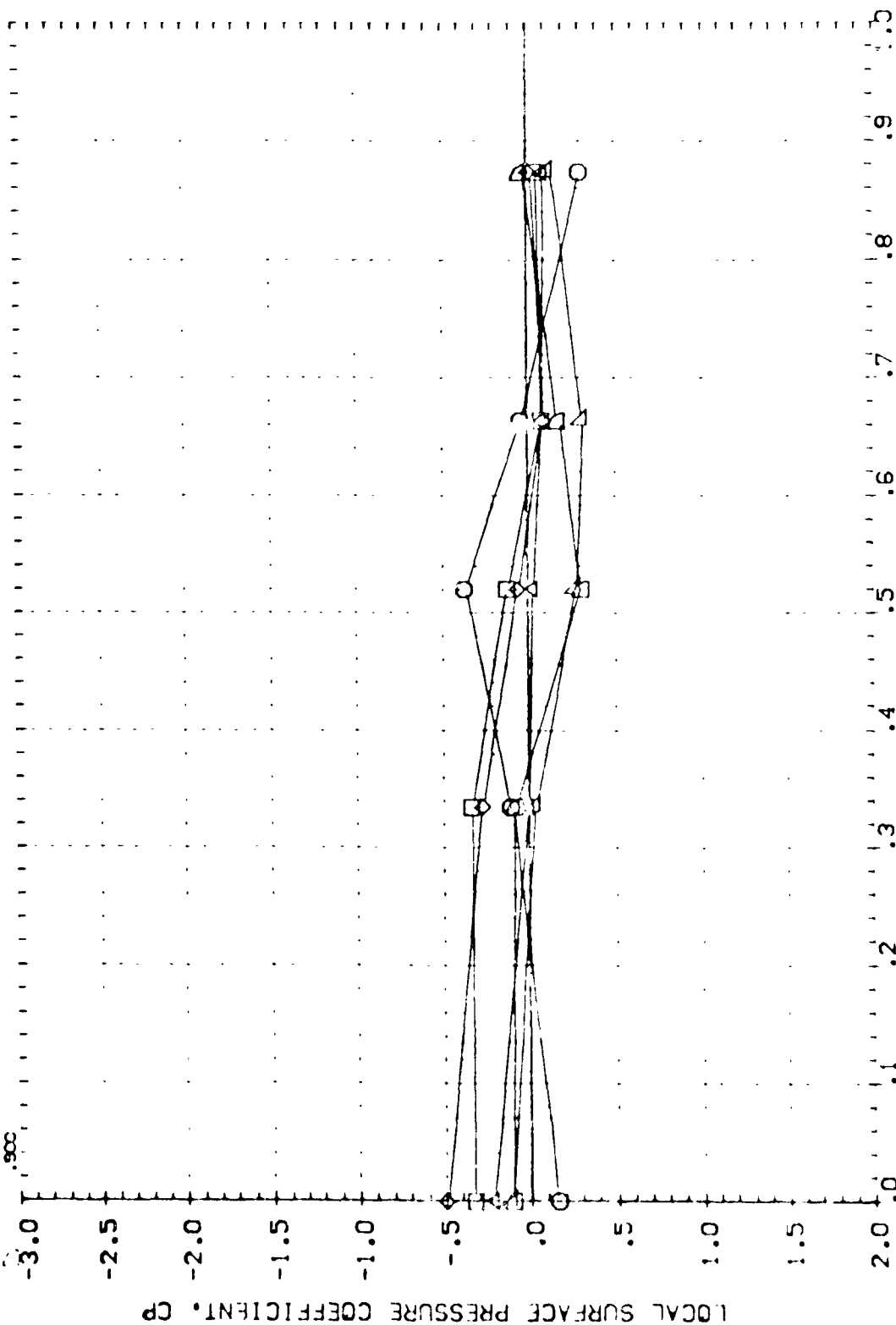


FIG 58 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, β 1.5, 1.5 ELEVON

0457-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL28)

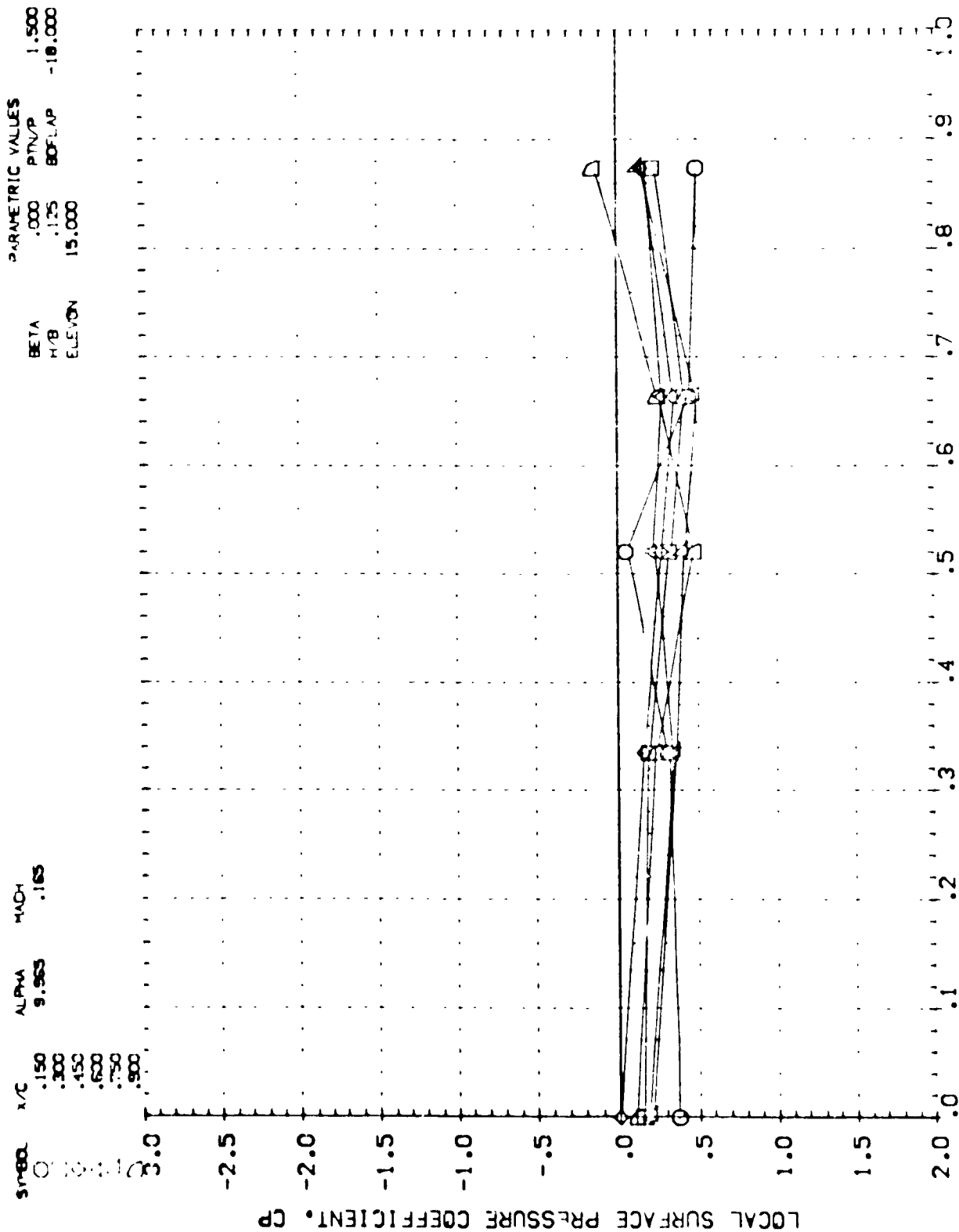


FIG 58 WING LOWER SURFACE PRESSURE SPANWISE DIS R WITH J40, PTN/P=1.5, 15 ELEVON

CAJTB-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL34)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H.B .286 BOFLAP -18.000
 ELEVON 15.000

ALPHA -.010 MACH .165

SYMBOL X/C
 .150
 .200
 .450
 .600
 .750
 .900

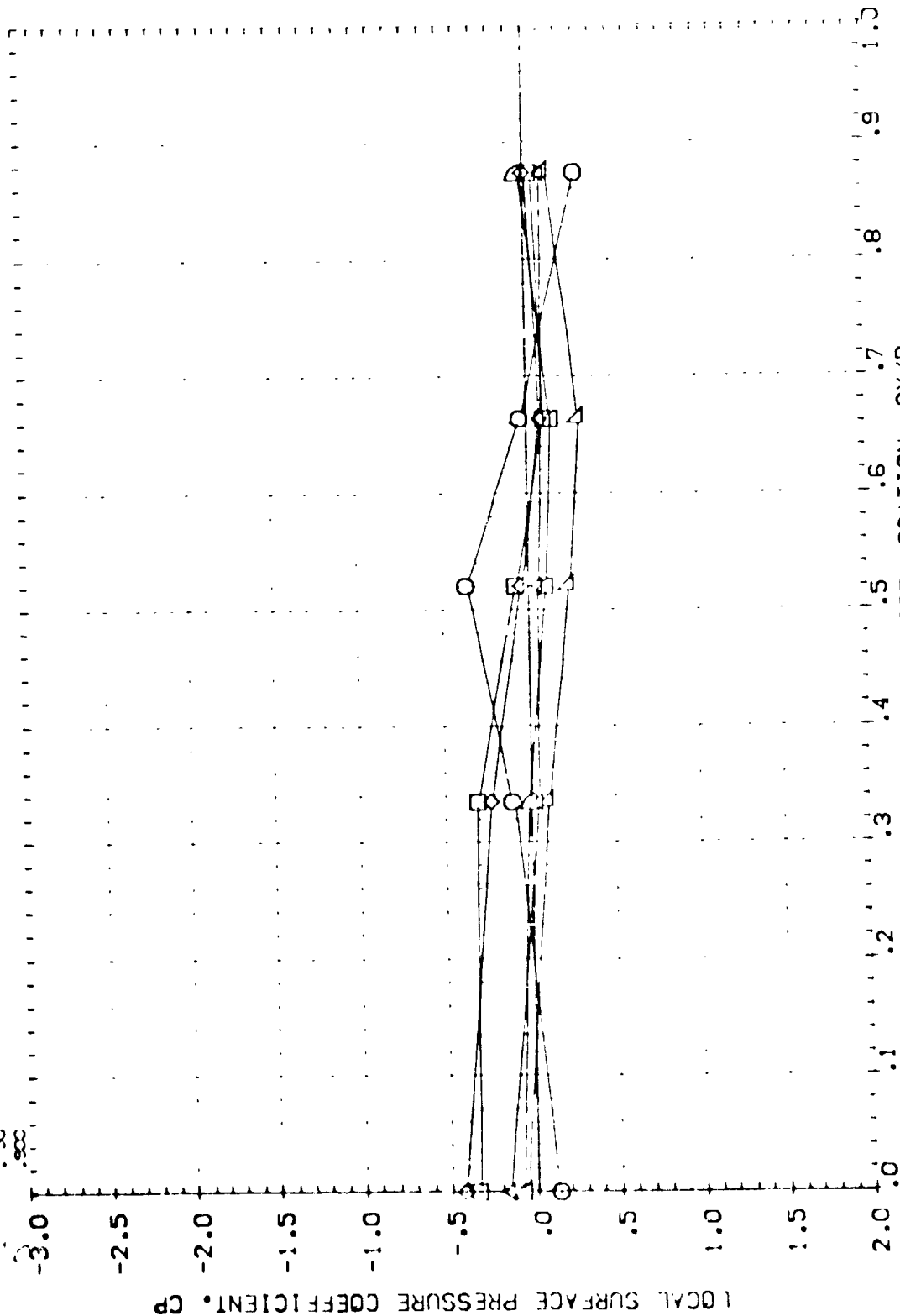


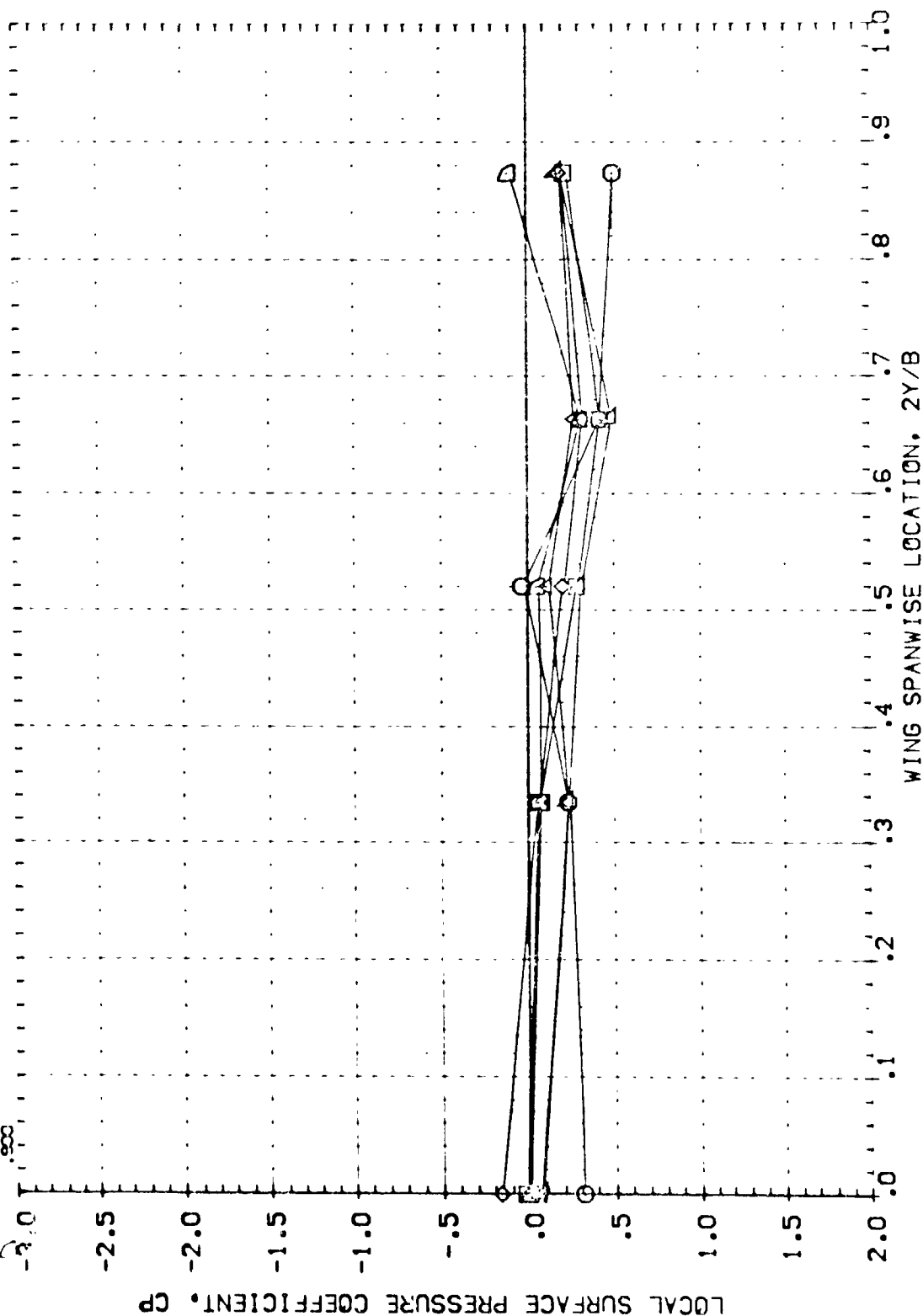
FIG 58 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.5, 15 ELEVON
 WING SPANWISE LOCATION, 2Y/B
 PAGE 264

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL34)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .705 JOFLAP -18.000
 ELEVON 15.000

ALPHA 9.995
 WCH .165

SYMBOL X/C
 1 .150
 2 .300
 3 .450
 4 .600
 5 .750
 6 .900



WING SPANWISE LOCATION, 2Y/B

FIG 58 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J41 W87E18 WING LOWER SURFACE (RDVL56)

PARAMETRIC VALUES
 BETA .000 PTN P 1.000
 H/B .038 BOFLAP -18.000
 ELEVON .000

ALPHA 10.005
 MACH .165

SYMBOL X/C
 O .150
 Δ .300
 ◇ .450
 □ .600
 ○ .750
 △ .900

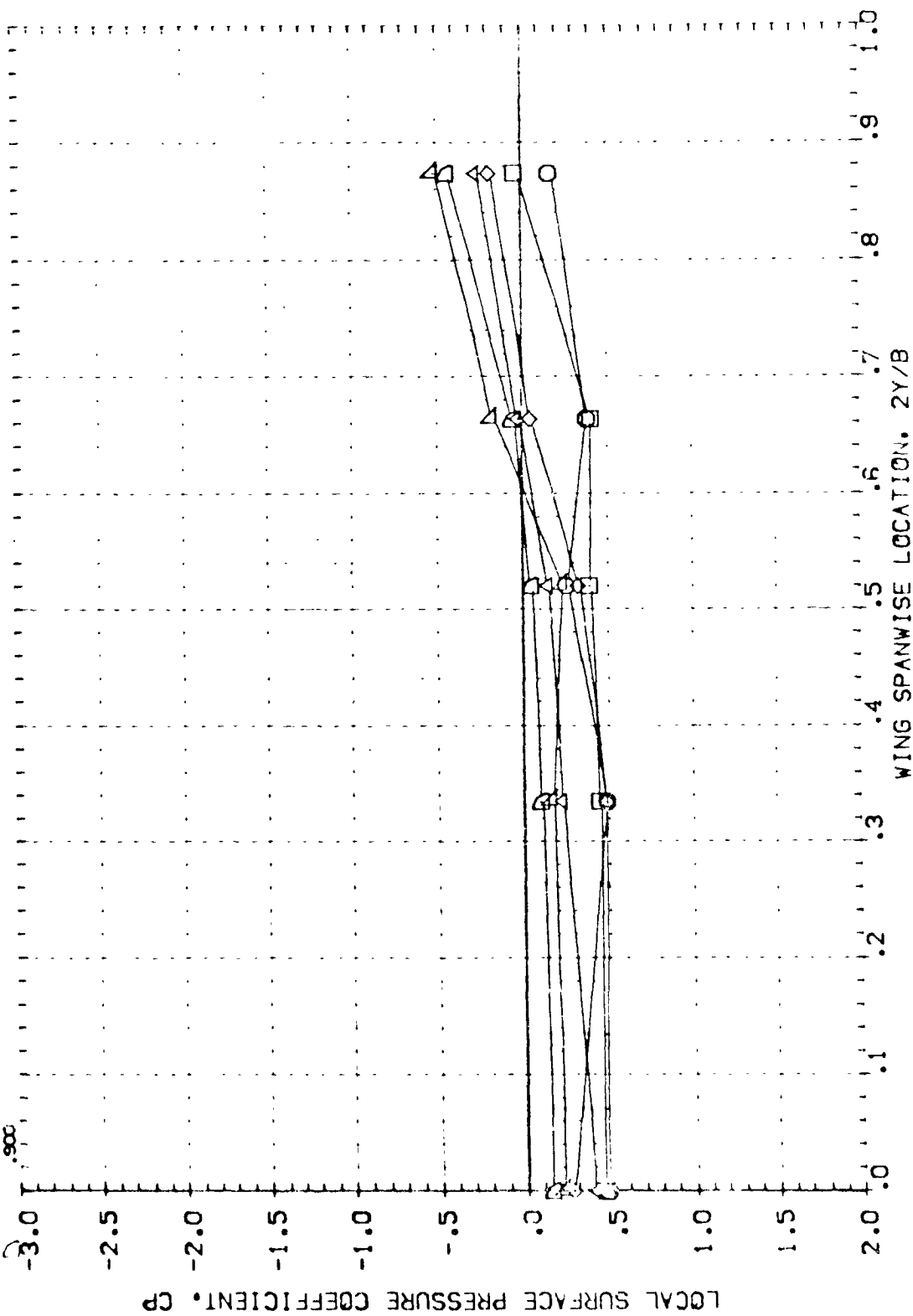


FIG 59 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B 916C5F1 J41 W87E18 WING LOWER SURFACE (RDVL58)

| | | | | | | |
|--------|-----|-------|------|-------------------|--------|---------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | |
| | | | | BETA | PTN/P | 1.000 |
| | | | | H/B | BDFLAP | -18.000 |
| | | | | ELEVON | .000 | |

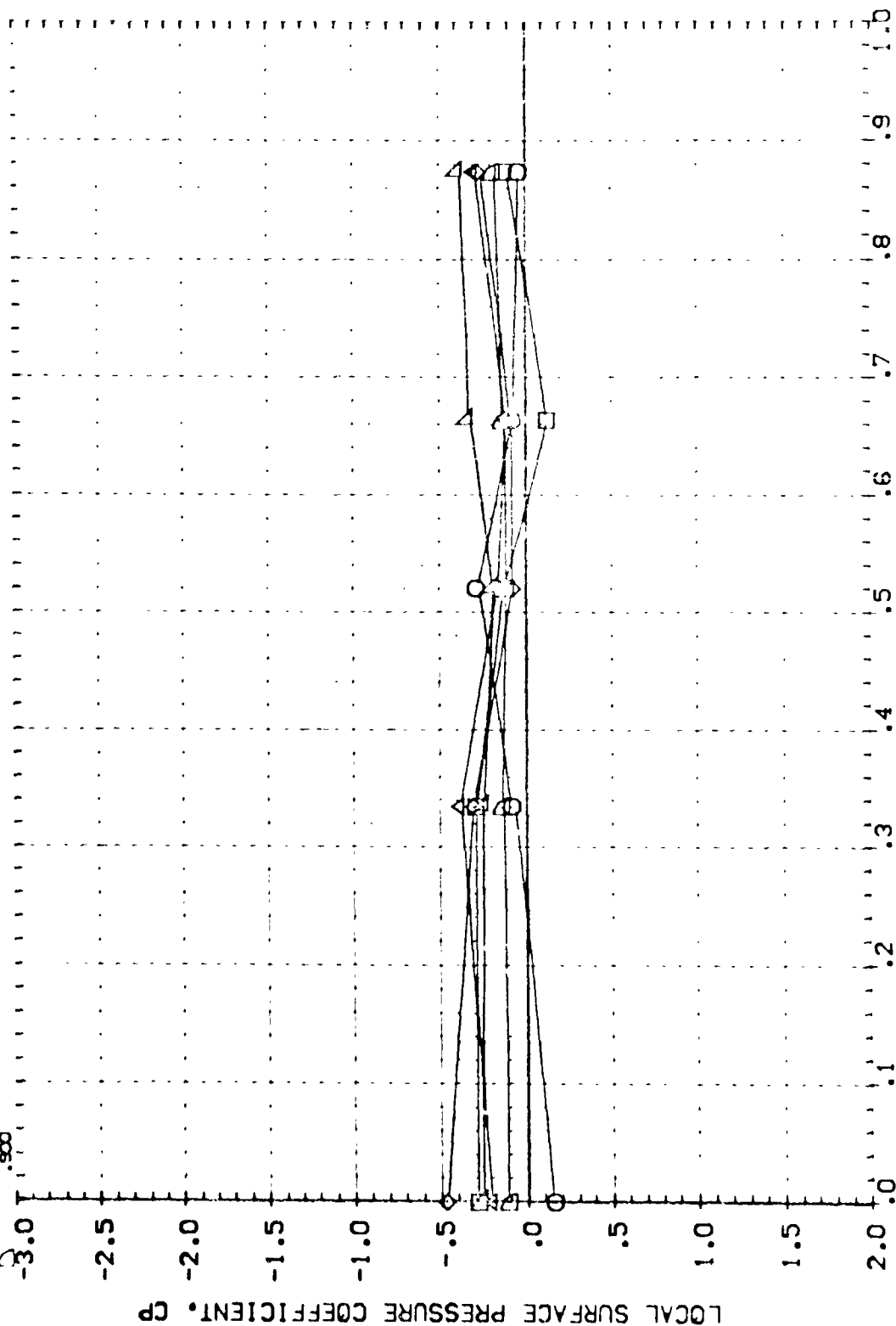


FIG 59 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B 816C5F1 J41 W87E18 WING LOWER SURFACE (RDVL53)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .286 80FLAP -18.000
 ELEVON .000

ALPHA -1.005
 MACH .165

SYMBOL X/C
 0.150
 0.300
 0.450
 0.600
 0.750
 0.900

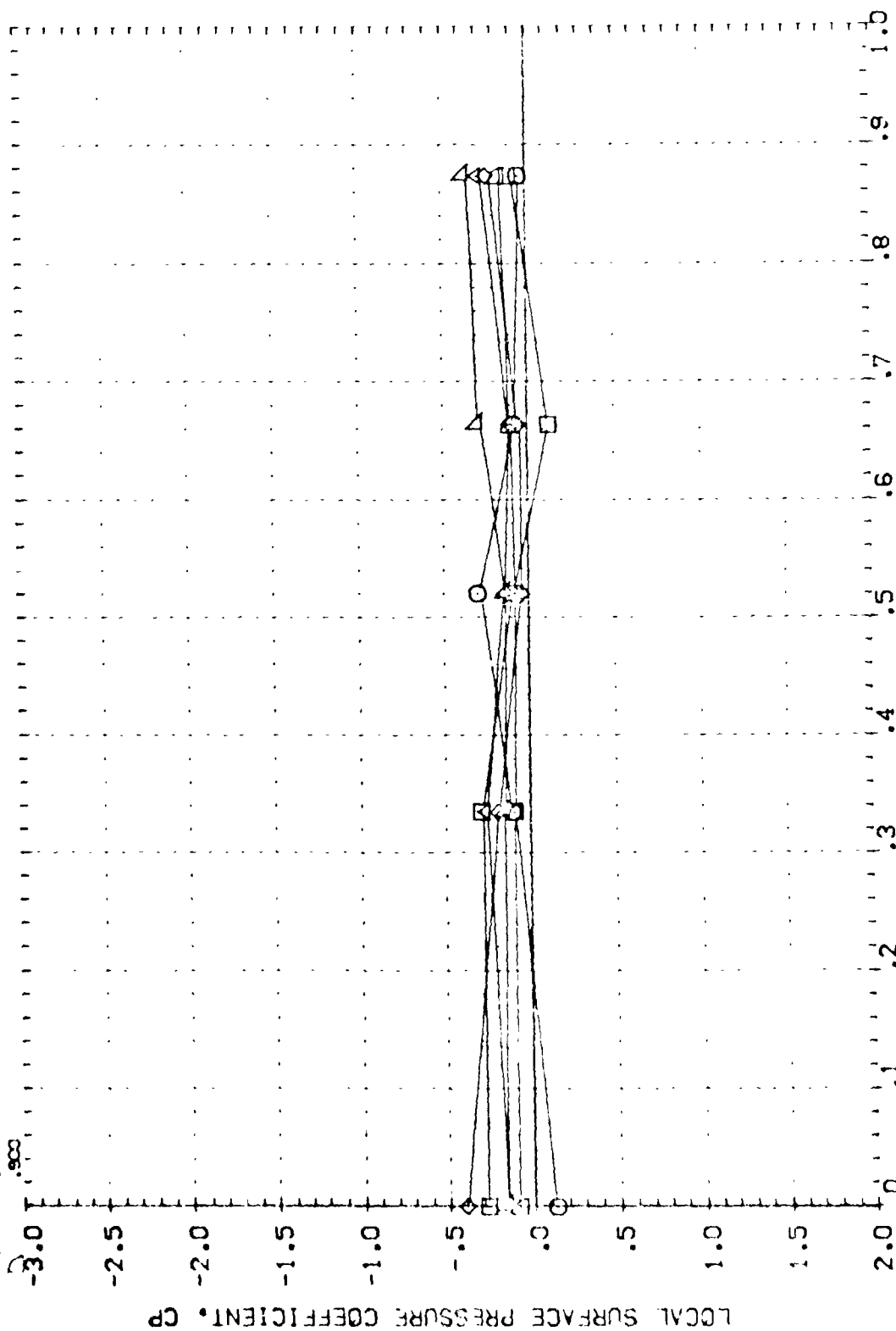


FIG 59 WING LOWER SURFACE PRESSURE SPANWISE DISR WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING LOWER SURFACE (RDVL53)

| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-----------------|------------------|
| | | | | BETA H/B | PTN/P BD LAP | 1,000 -10,000 |
| ◇ | .150 | 9.980 | .165 | .000 | .000 | .000 |
| ◇ | .300 | | | .286 | | |
| ◇ | .450 | | | .000 | | |
| ◇ | .600 | | | | | |
| ◇ | .750 | | | | | |
| ◇ | .900 | | | | | |

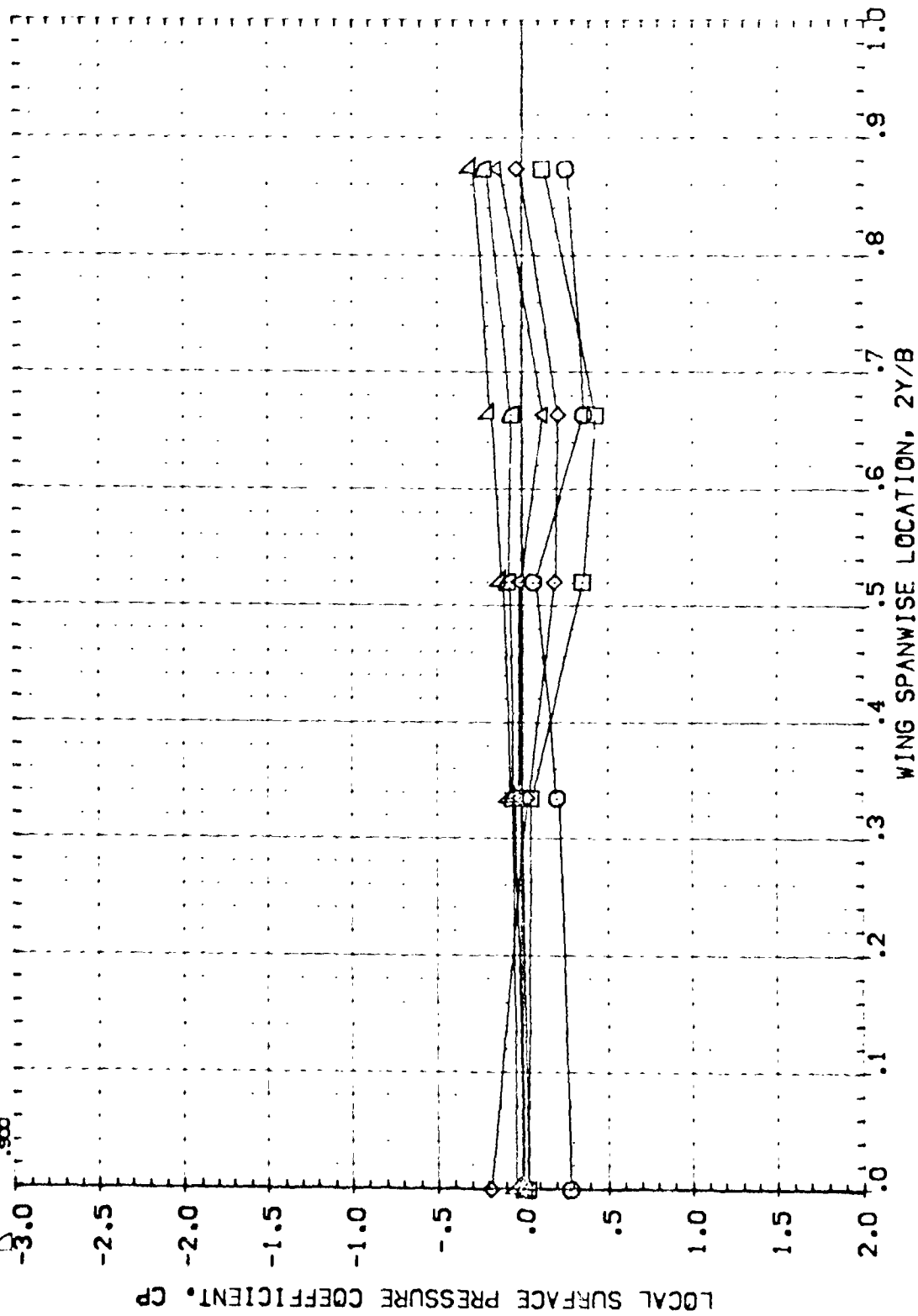


FIG 59 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.0, 0 ELEVON

| | | | | | | | |
|--------|-----|-------|------|-------------------|------|--------|---------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | .000 | PTN/P | 1.300 |
| | | | | H/B | .009 | EDFLAP | -10.000 |
| | | | | ELEVON | .000 | | |

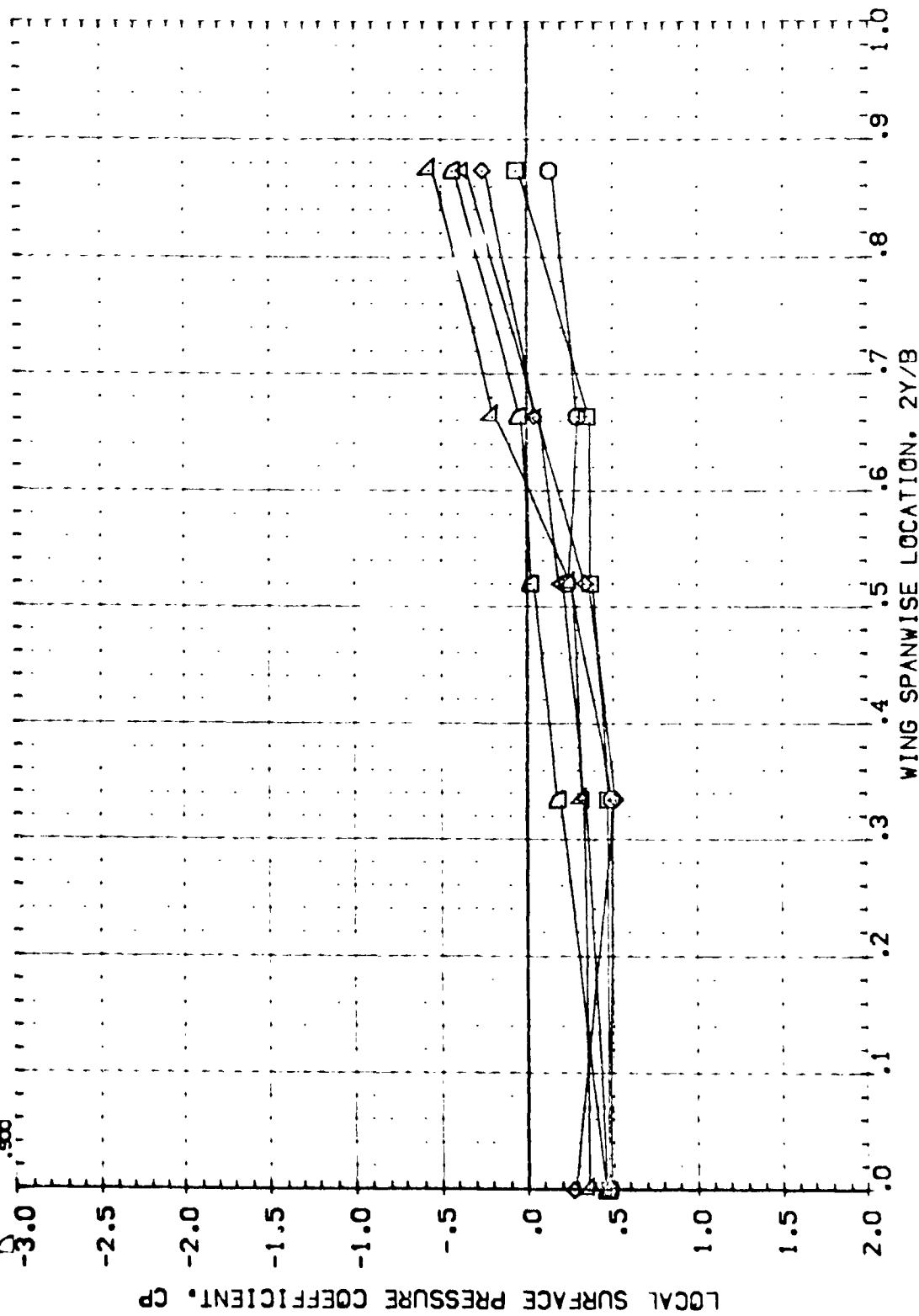


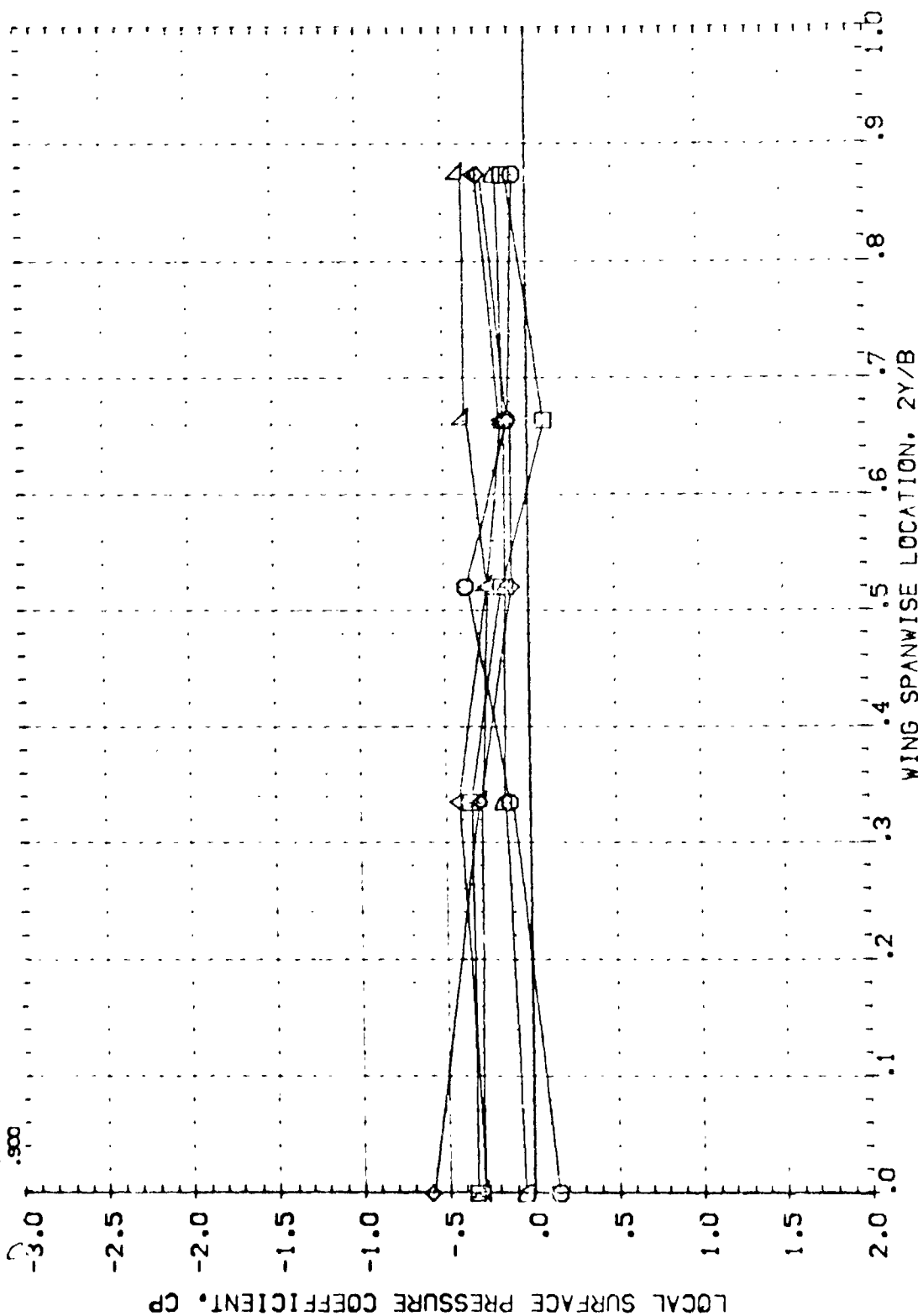
FIG 60 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3, 0 ELEVON

0A57-9 B16C5F1 J41 W87E18 WING LOWER SURFACE (RDVL57)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BOFLAP -18.000
 ELEVON .000

ALPHA -.005 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, 2Y/B

FIG 60 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J41 W87E18 WING LOWER SURFACE (RDVL57)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BOFLAP -18.000
 ELEVON .000

ALPHA 9.995
 MACH .165

X/C
 .150
 .300
 .450
 .600
 .750
 .900

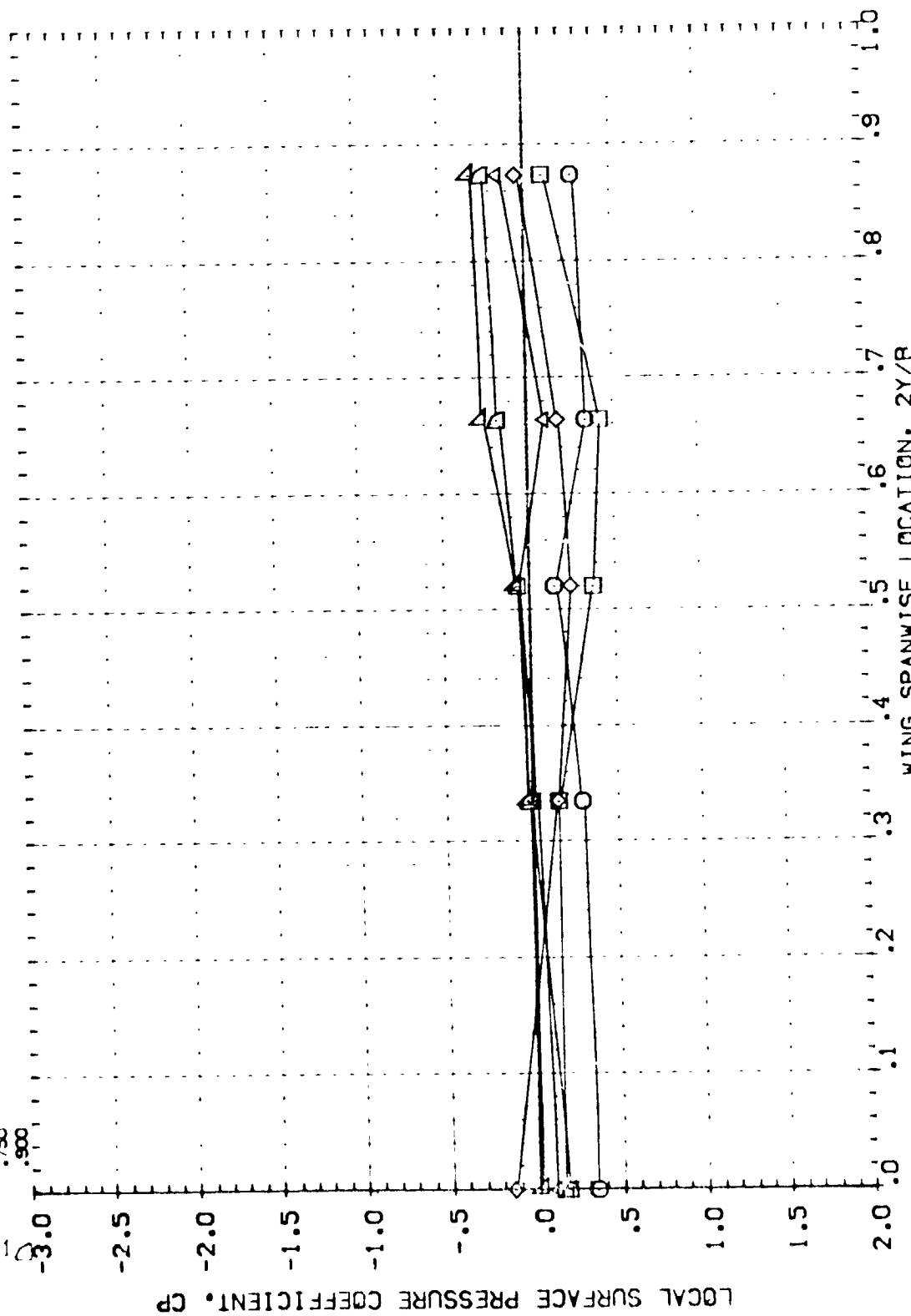


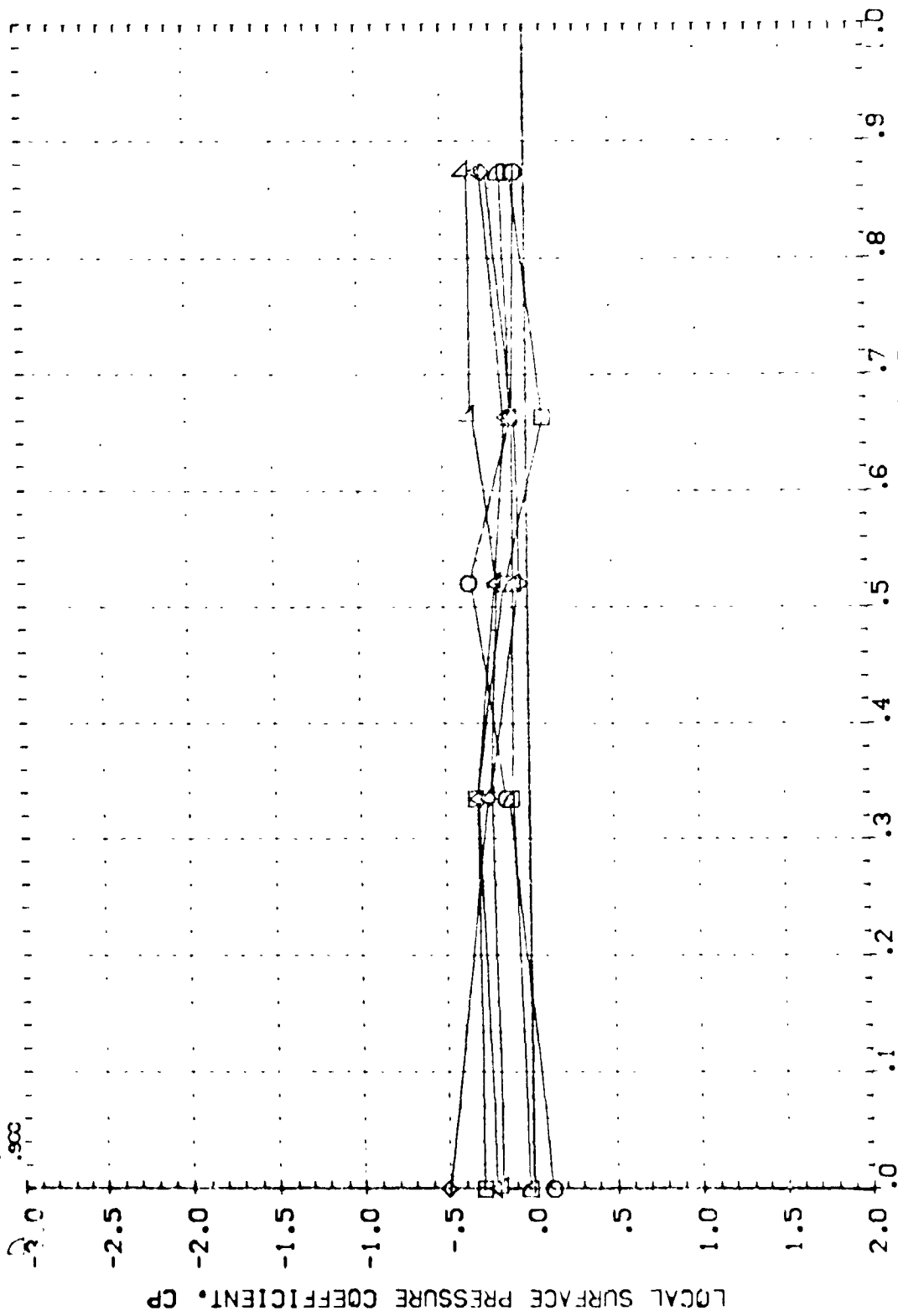
FIG 60 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B 916CSF1 J41 W87E18 WING LOWER SURFACE (RDVL52)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .786 BOFLAP -18.000
 ELEVON .000

ALPHA -0.005
 W/D 1.65

SYMBOL
 1.50
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, 2Y/B

FIG 60 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3, 0 ELEVON

CA57-B B16C5F1 J41 W87E18 WING LOWER SURFACE (RDVL52)

| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|---------|--------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .150 | 9.990 | .165 | .000 | 1.300 | | |
| ◇ | .300 | | | .286 | | -10.000 | |
| △ | .450 | | | .000 | | | |
| □ | .600 | | | | | | |
| ○ | .750 | | | | | | |
| ○ | .900 | | | | | | |

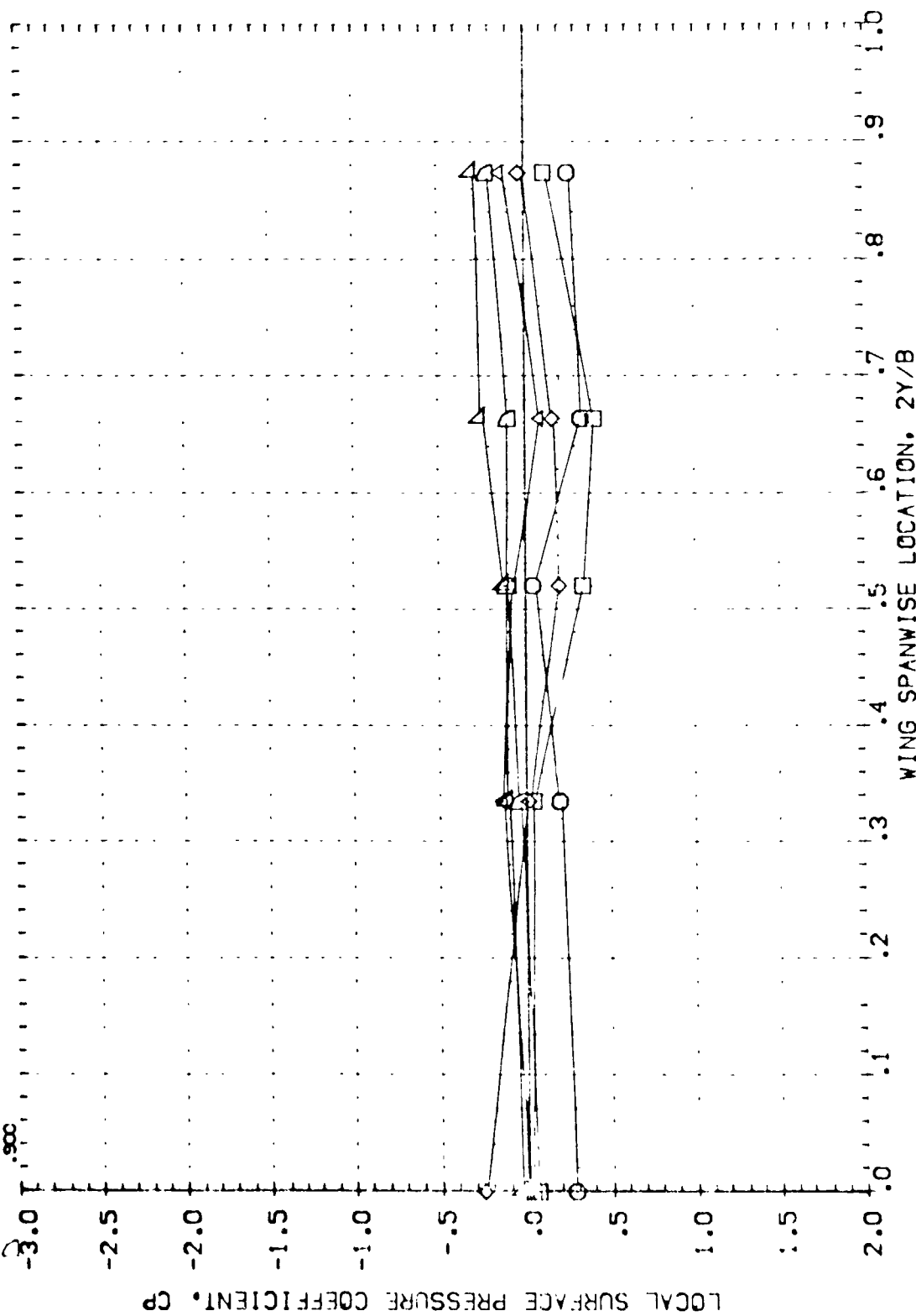


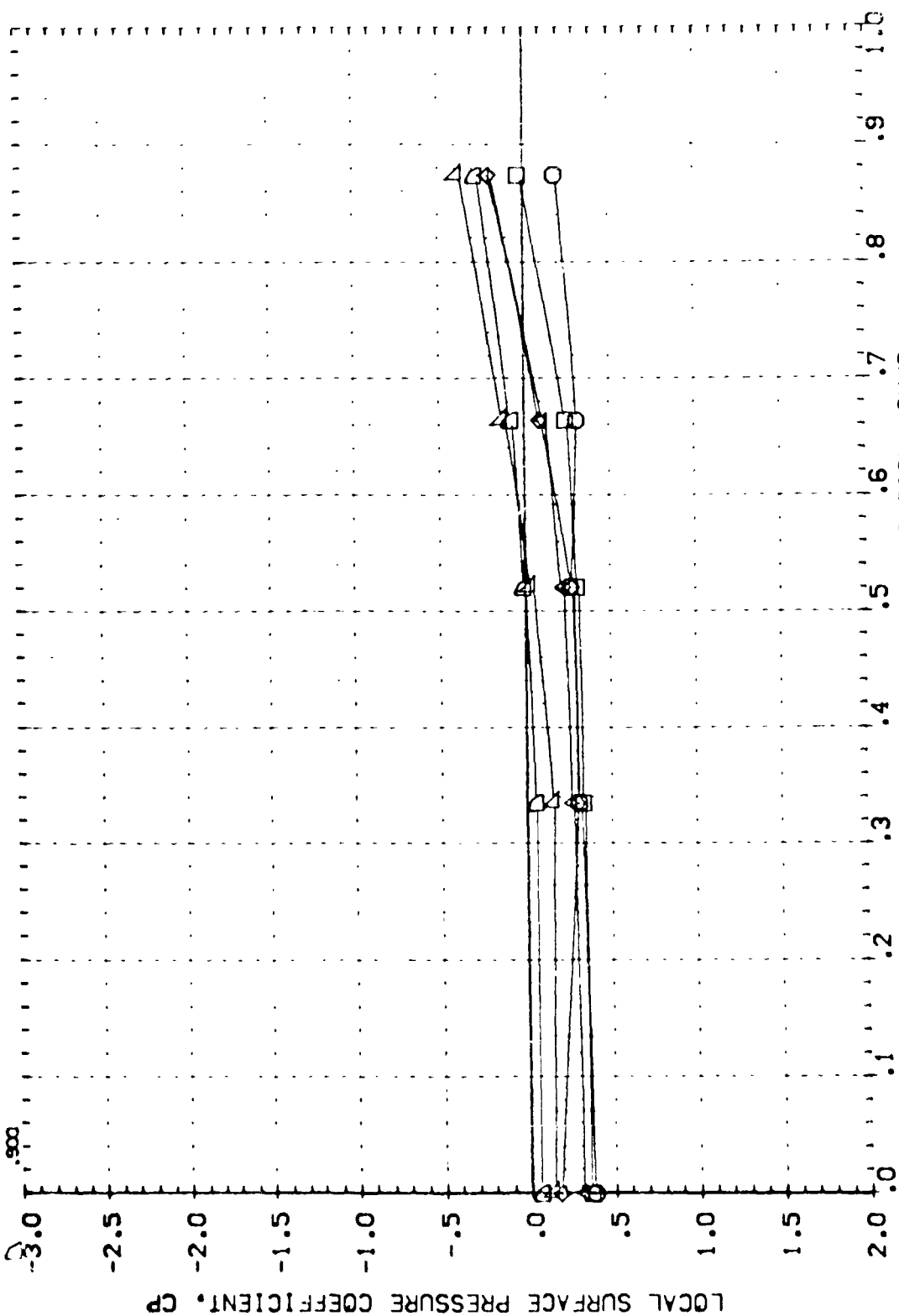
FIG 60 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J41, PTN/P=1.3, 0 ELEVON
WING SPANWISE LOCATION, 2Y/B

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL64)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .039 BOFLAP -18.000
 ELEVON .000

ALPHA 10.000
 MACH .165

SYMBOL X/C
 .150
 .300
 .450
 .600
 .750
 .900



WING SPANWISE LOCATION, 2Y/B

FIG 61 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL61)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .125 BOFLAP -18.000
 ELEVON .000

SYMBOL X/C ALPHA MACH
 .150
 .300
 .450
 .600
 .750
 .900

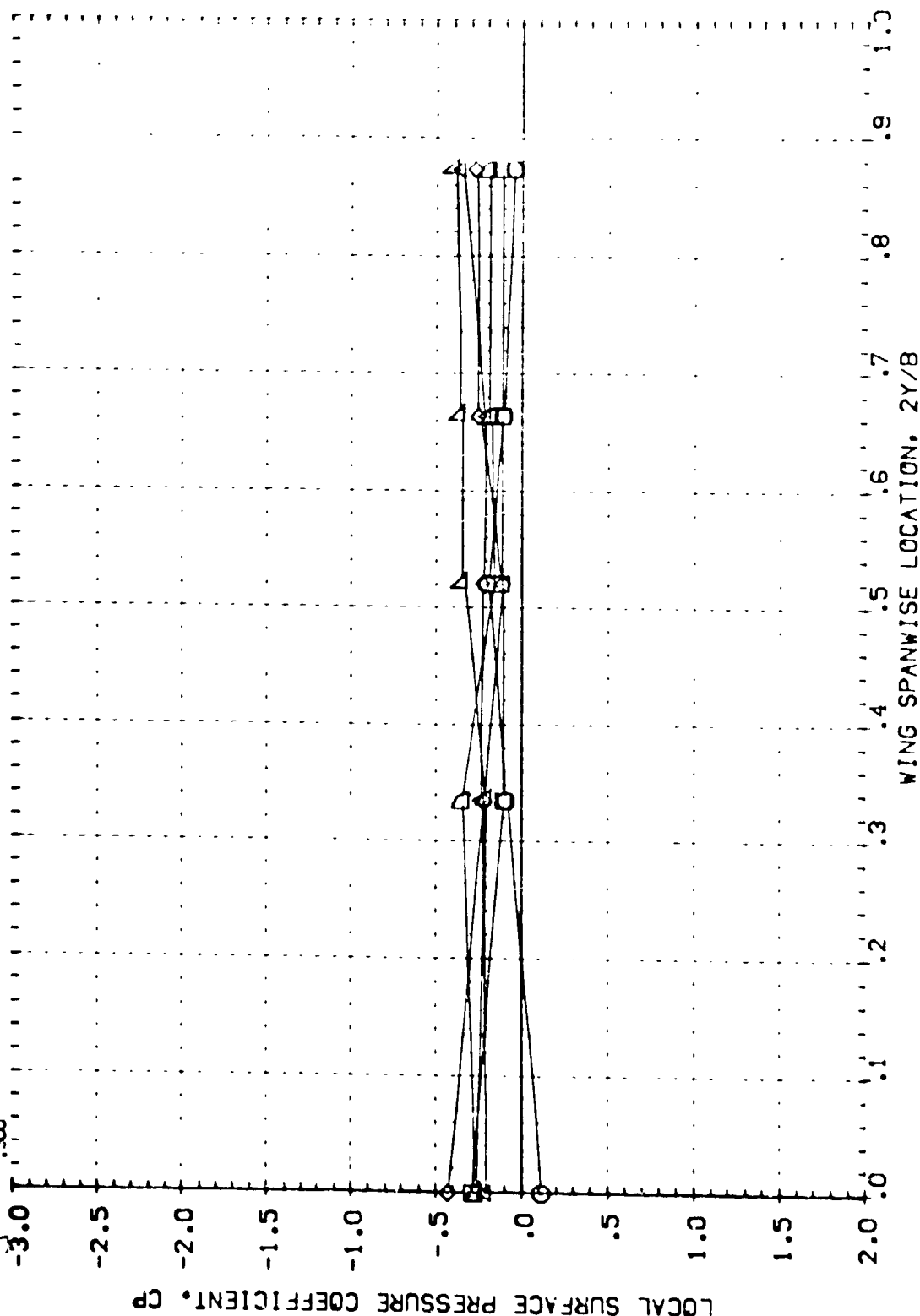


FIG 61 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J42, PTN/P=1.0, 0 ELEVON

CA57-B B1605F: J42 W87E18 WING LOWER SURFACE (RDVL61)

PARAMETRIC VALUES
 BETA .000 PTH/P 1.000
 H/B .125 CXC/AP -18.000
 ELEVO .000

ALPHA 9.565
 MACH .165

SYMBOL
 .150
 .300
 .450
 .600
 .750
 .900

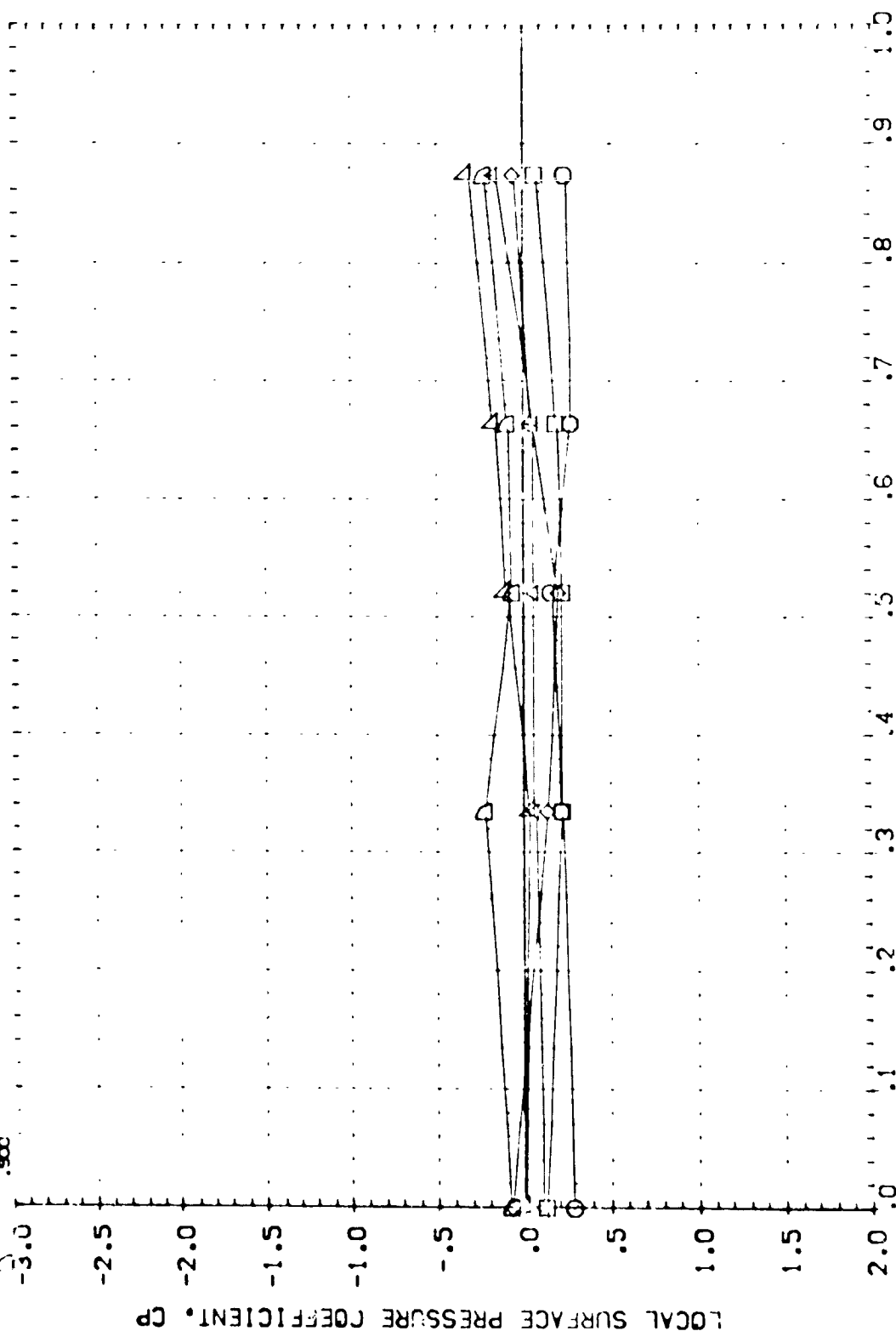


FIG 61 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J42. PTH/P=1.0, CXC/AP=

0457-B B16CSE1 J42 W87E18 WING LOWER SURFACE (RDVL70)

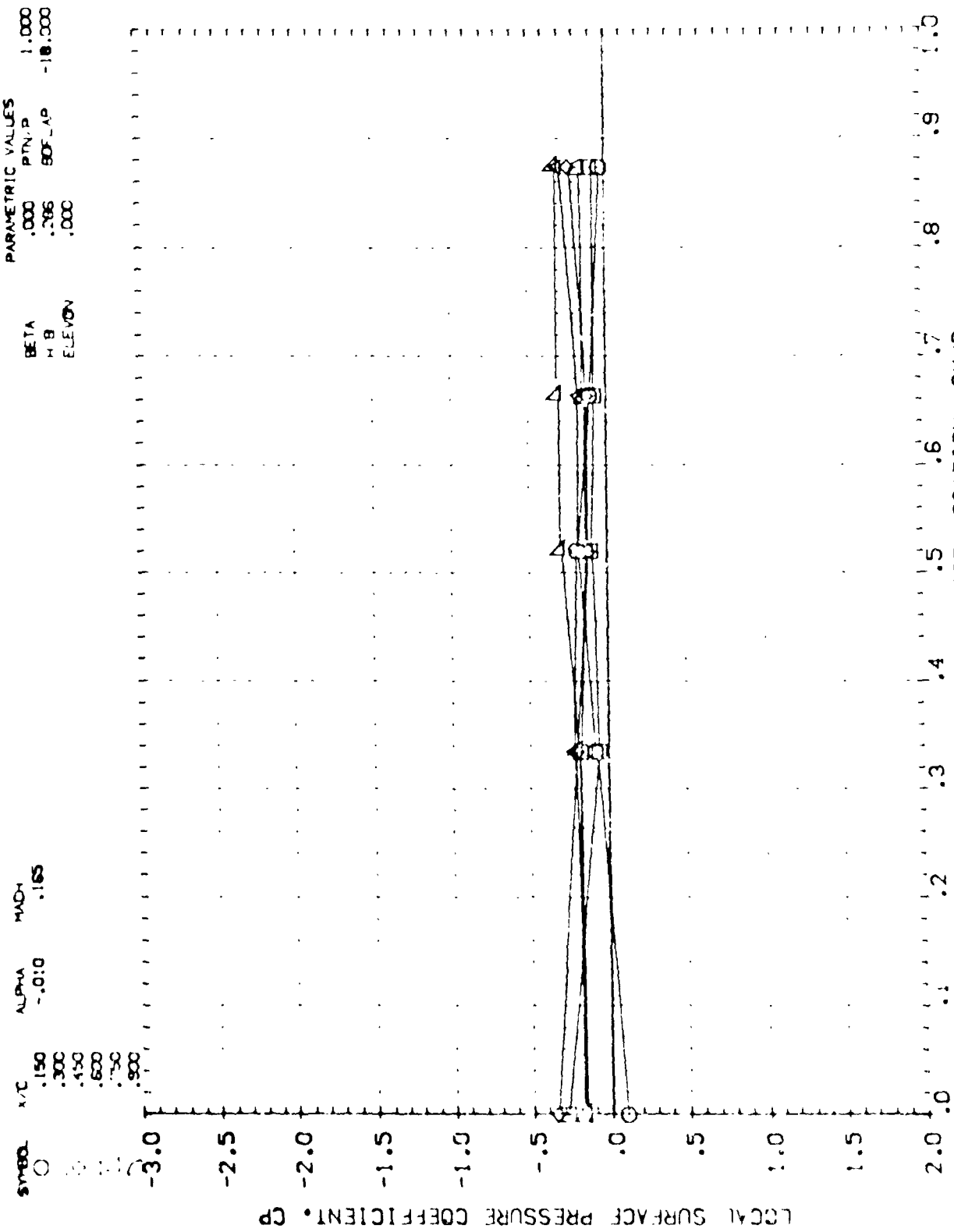


FIG 61 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B 816C5F1 J42 W87E18 WING LOWER SURFACE (RDVL70)

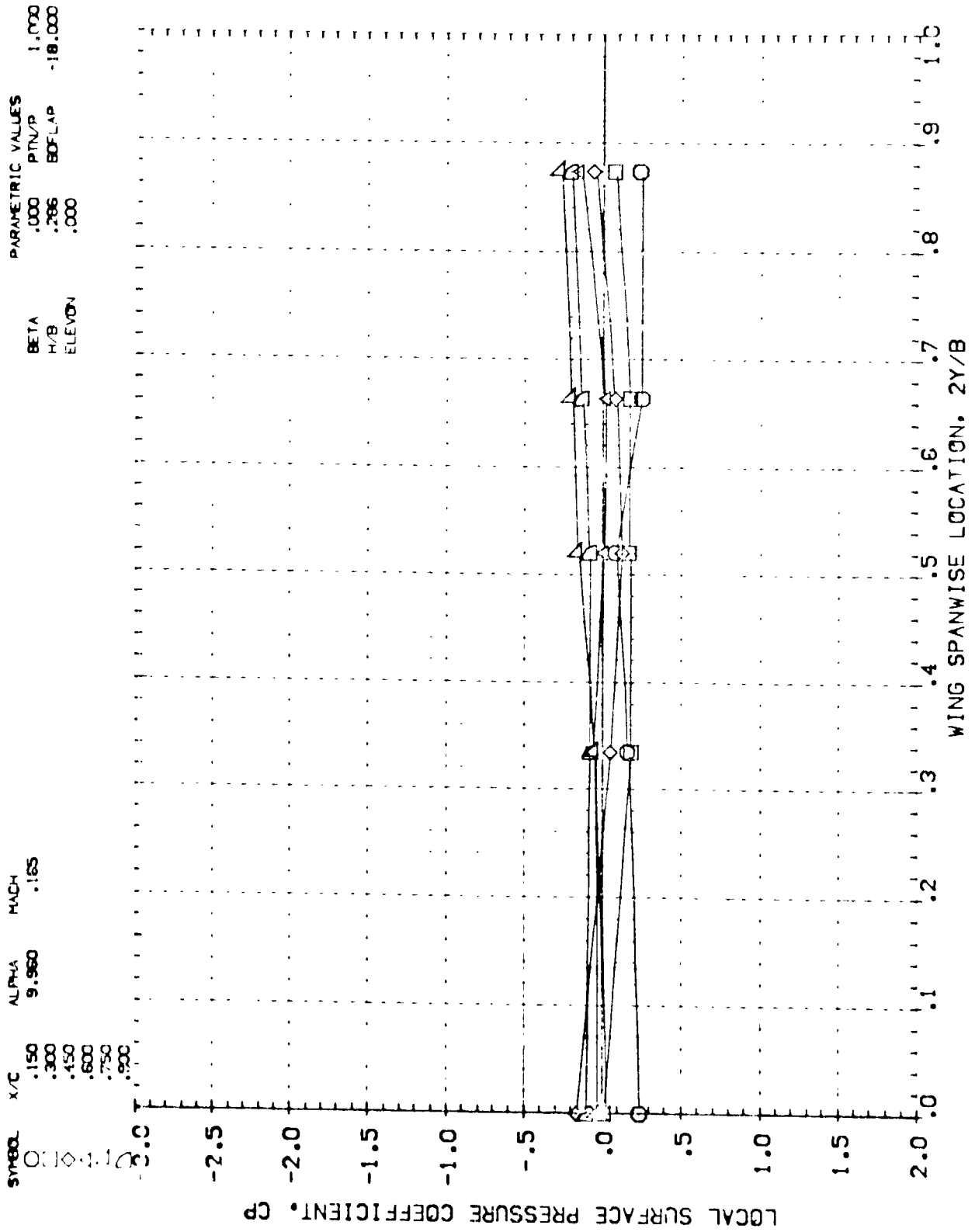


FIG 61 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J42 W87 8 WING LOWER SURFACE (RDVL63)

| | | | | | | | | | | |
|--------|-----|-------|------|-------------------|-------|--------|--------|-----|--------|--------|
| SYMBOL | X/C | ALPHA | MACH | PARAMETRIC VALUES | | | | | | |
| | | | | BETA | PTN/P | BOFLAP | ELEVON | | | |
| | | | | | | | | H B | BOFLAP | ELEVON |
| | | | | | | | | | | |
| | | | | | | | | | | |

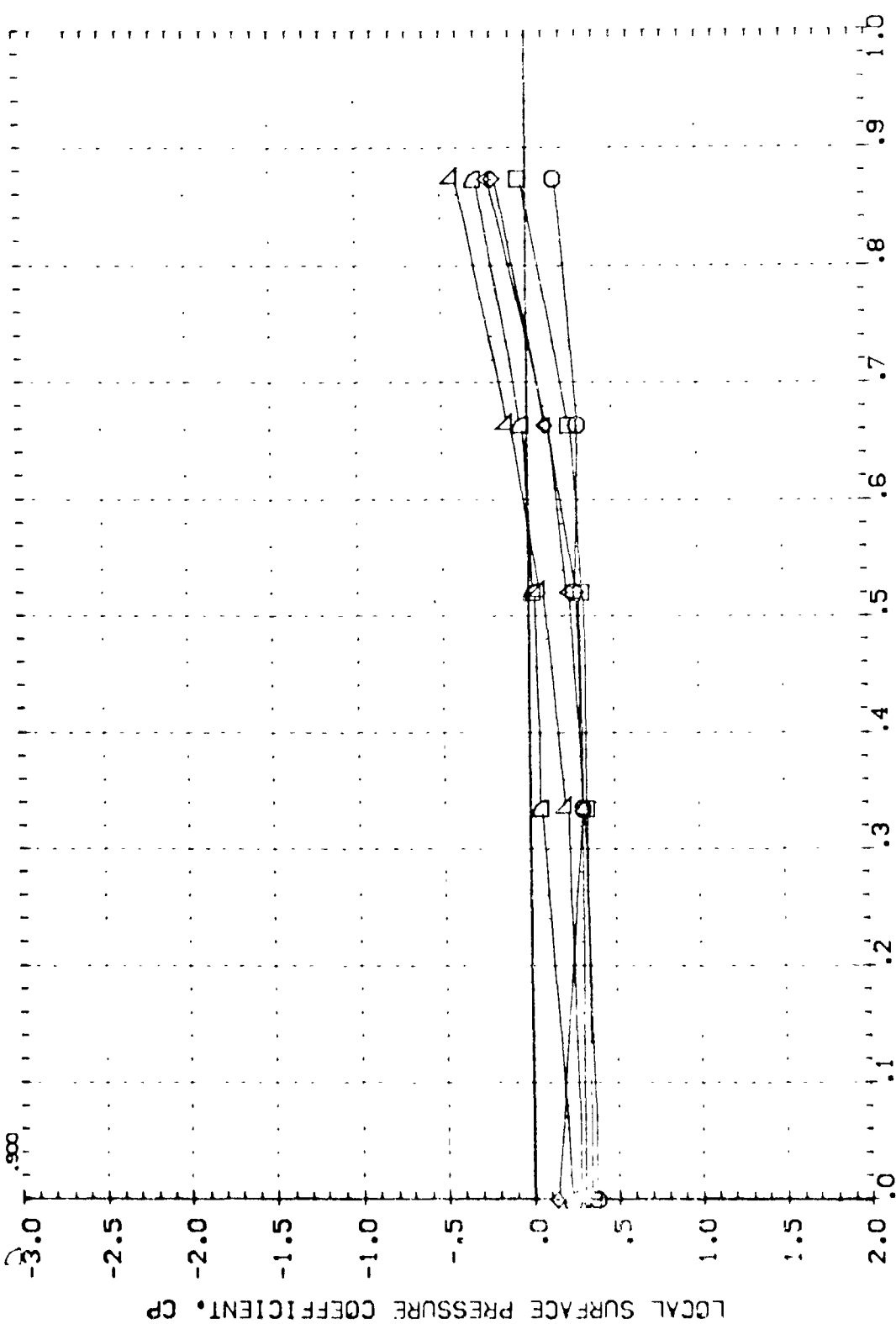


FIG 62 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.3, 0 ELEVON

GAS7-B 816CSF1 J42 W87E18 WING LOWER SURFACE (RDVL60)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BDFLAP -18.000
 ELEVON .000

SYMBOL X/C ALPHA MACH
 .150
 .300
 .450
 .600
 .750
 .900

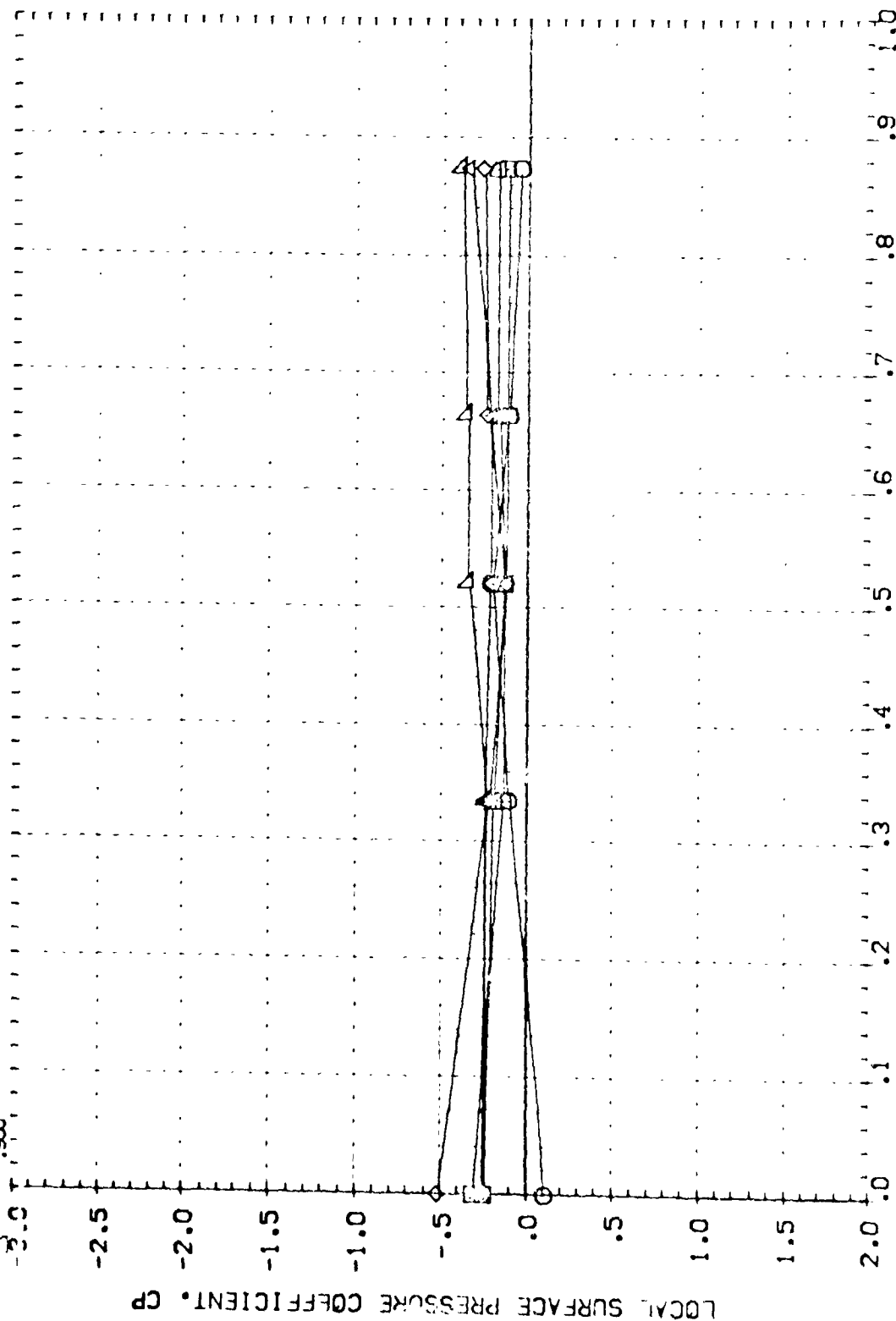


FIG 62 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J42 W87E18 WING LOWER SURFACE (RDVL60)

PARAMETRIC VALUES
 .000 PTN/P 1.300
 .125 BDFLAP -18.000
 .000 ELEVON

ALPHA 9.960
 MACH .165

SYMBOL X/C
 .150
 .300
 .450
 .600
 .750
 .900

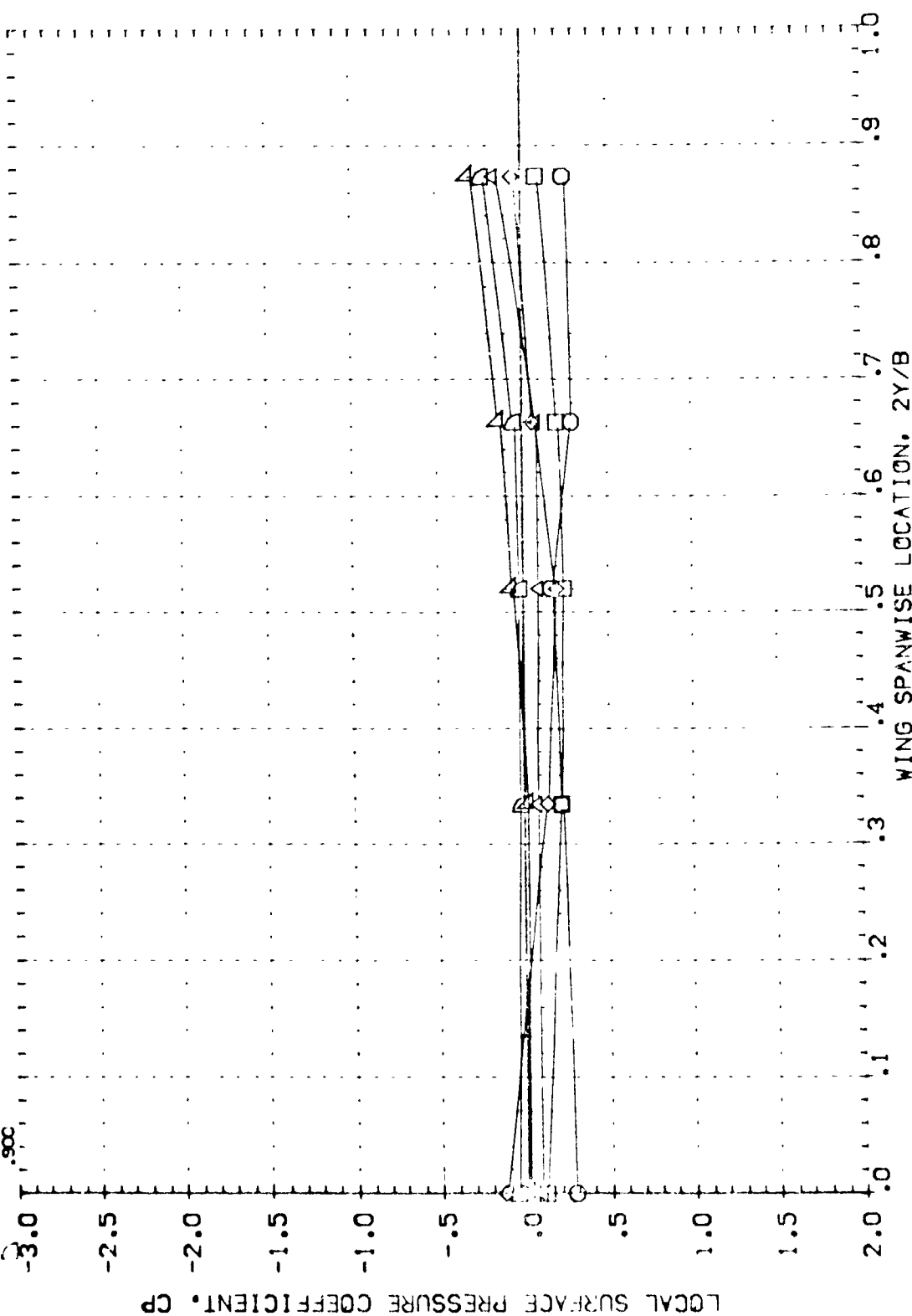


FIG 62 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL69)

PARAMETRIC VALUES
 .000 PTN/P 1.300
 .206 BOFLAP -18.000
 .000 ELEVON

ALPHA .005
 MACH .165

SYMBOL X/C
 O .150
 Δ .300
 □ .450
 ◇ .600
 ○ .750
 ● .900

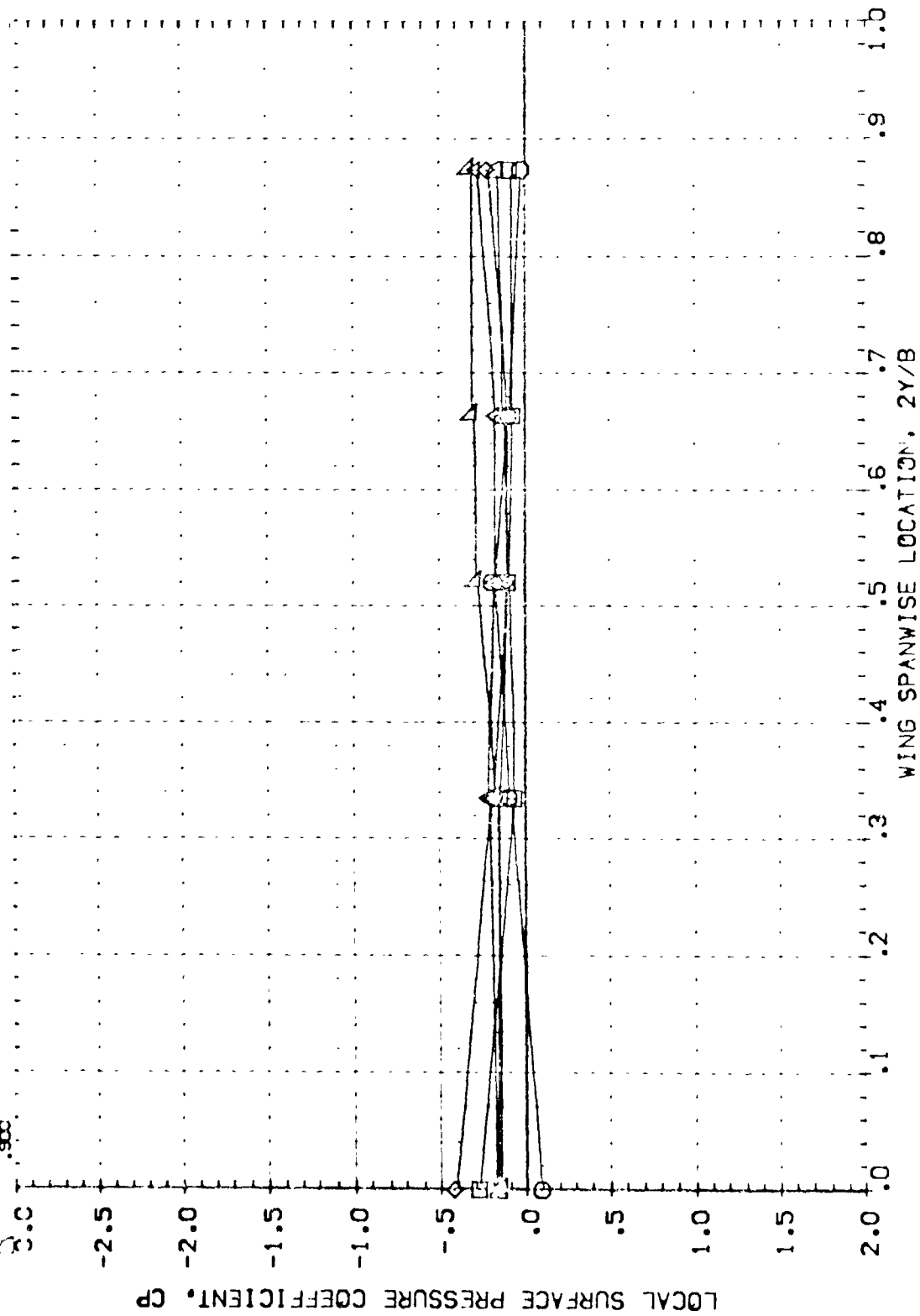


FIG 62 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B1605F1 J42 W87E18 WING LOWER SURFACE (RDVL69)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 4/8 .206 BOFL 1.3 -10.000
 ELEVON .000

ALPHA 10.010 MACH .165

SYMBOL X/C
 O .150
 O .300
 O .450
 O .600
 O .750
 O .900

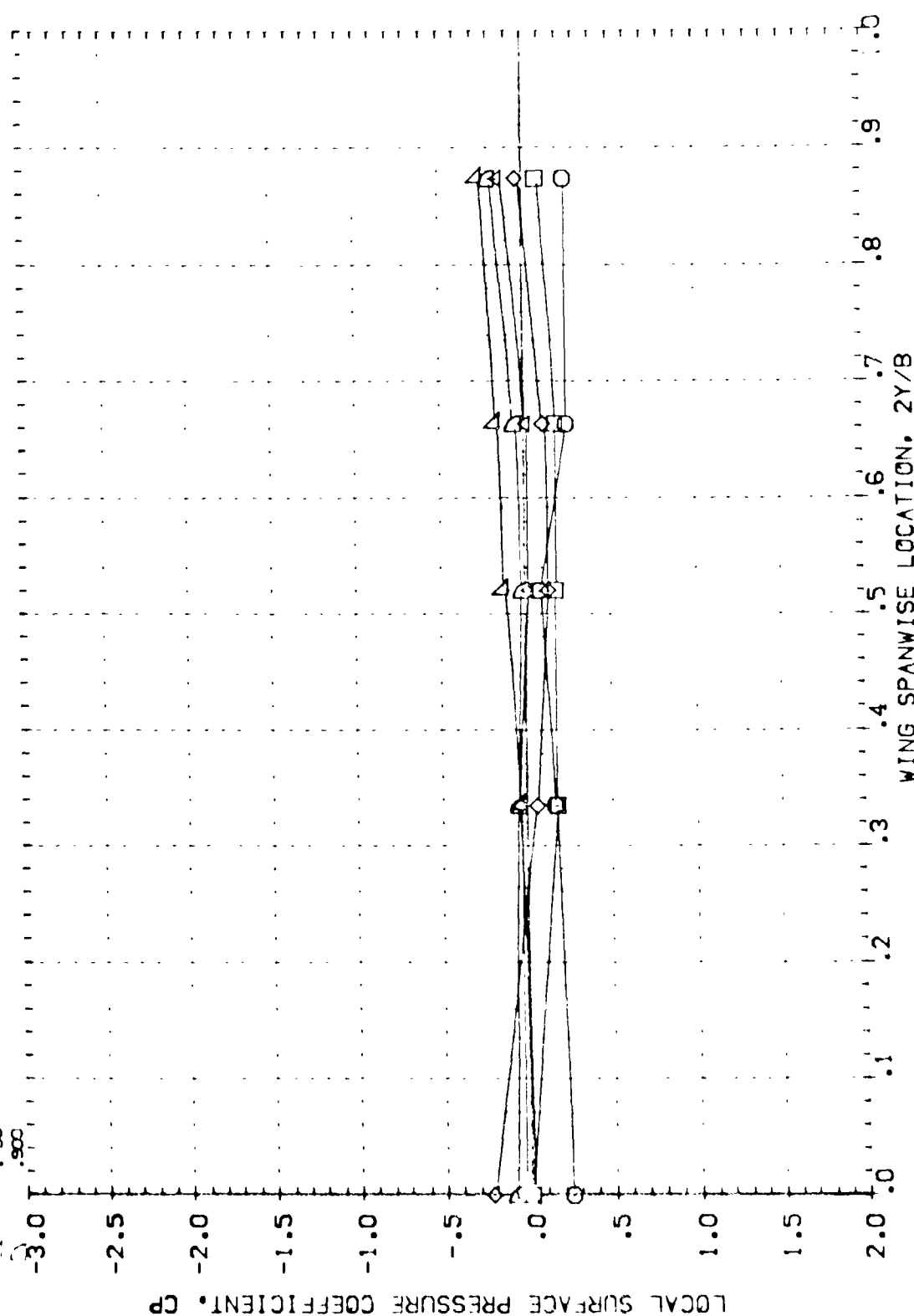


FIG 62 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PT/P=1.3, 0 ELEVON

0A57-B 816C5F1 J42 W87E18 WING LOWER SURFACE (RDVL62)

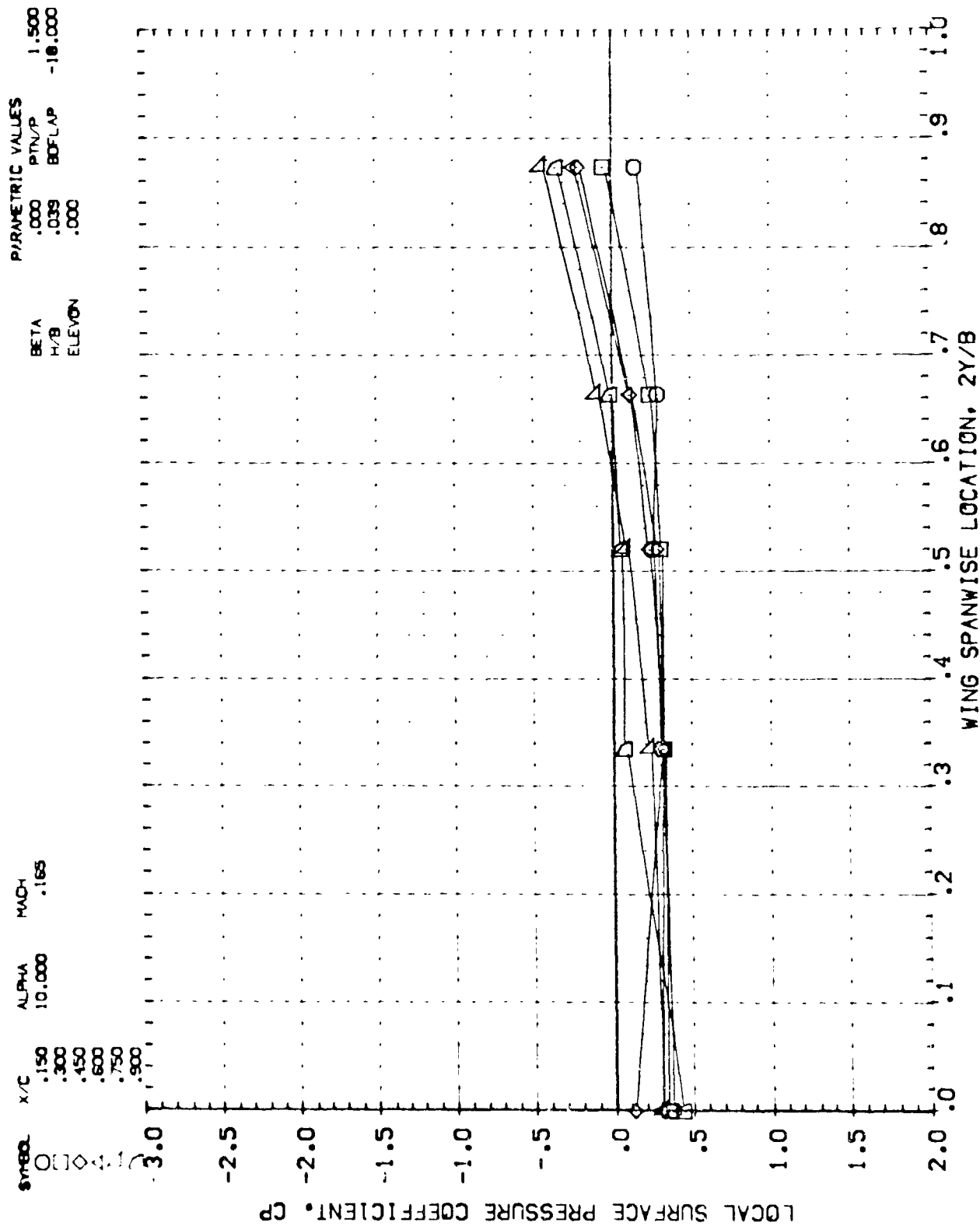


FIG 63 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL59)

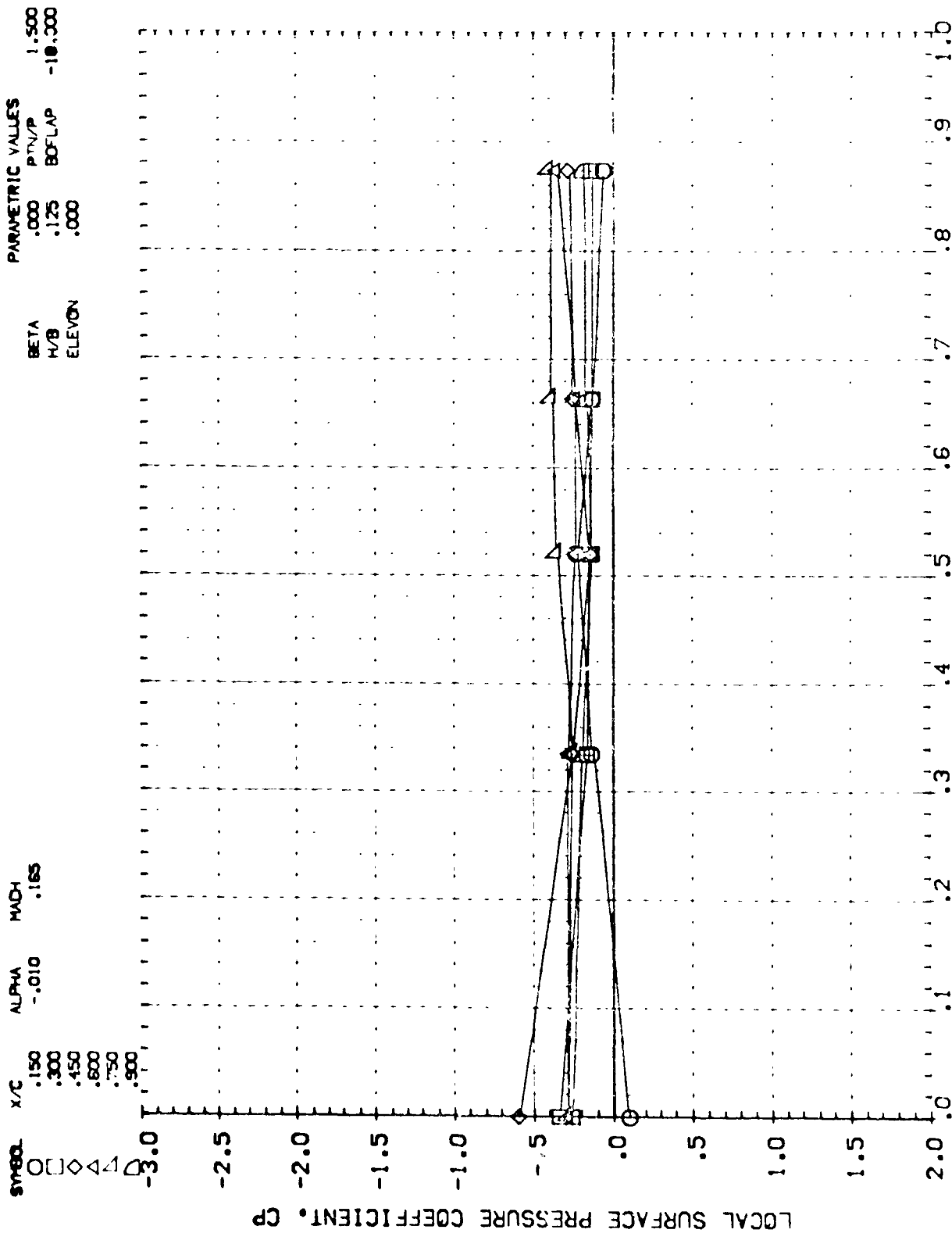


FIG 63 WING LOWER SURFACE PRESSURE SPANWISE DISR WITH J42, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL59)

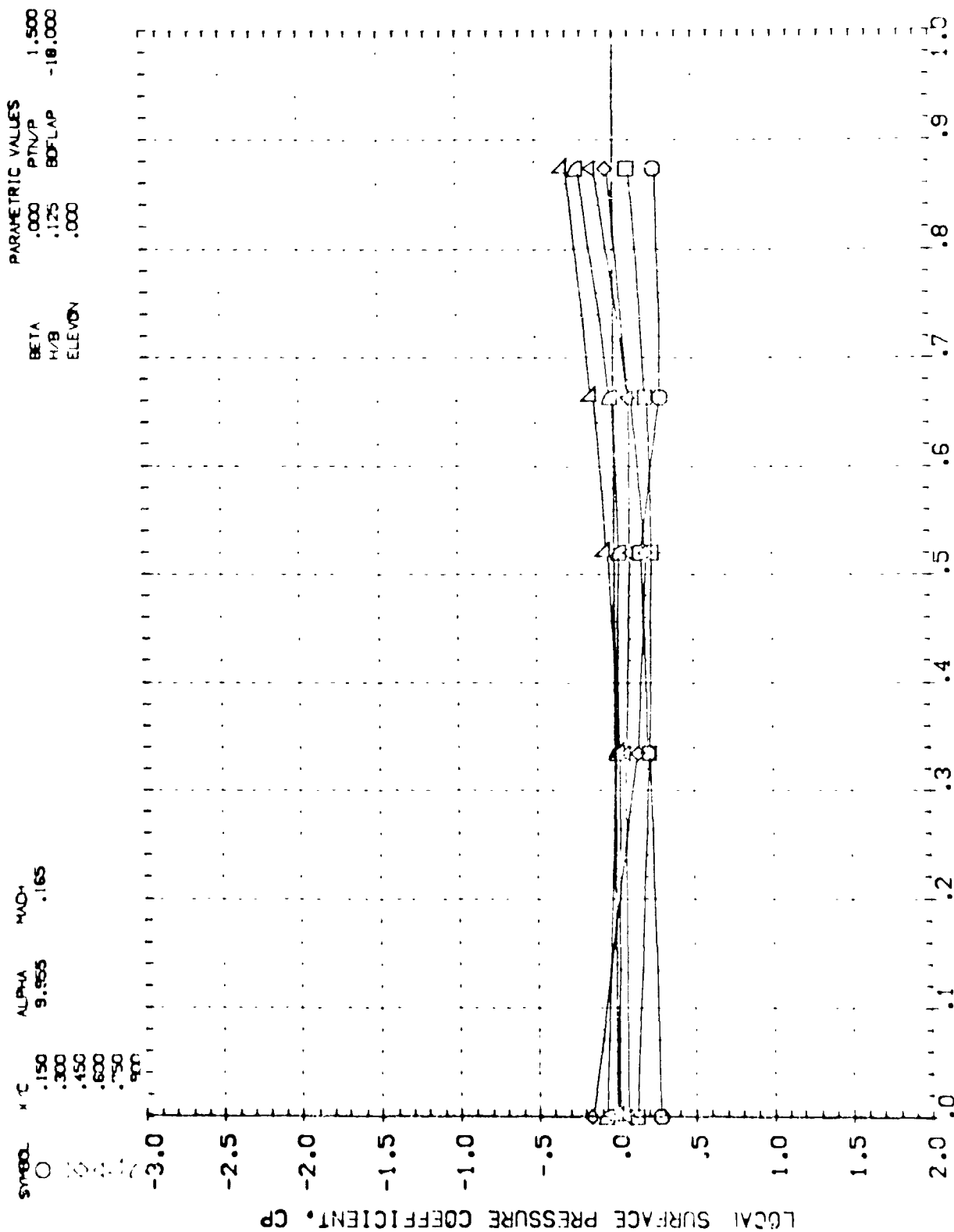


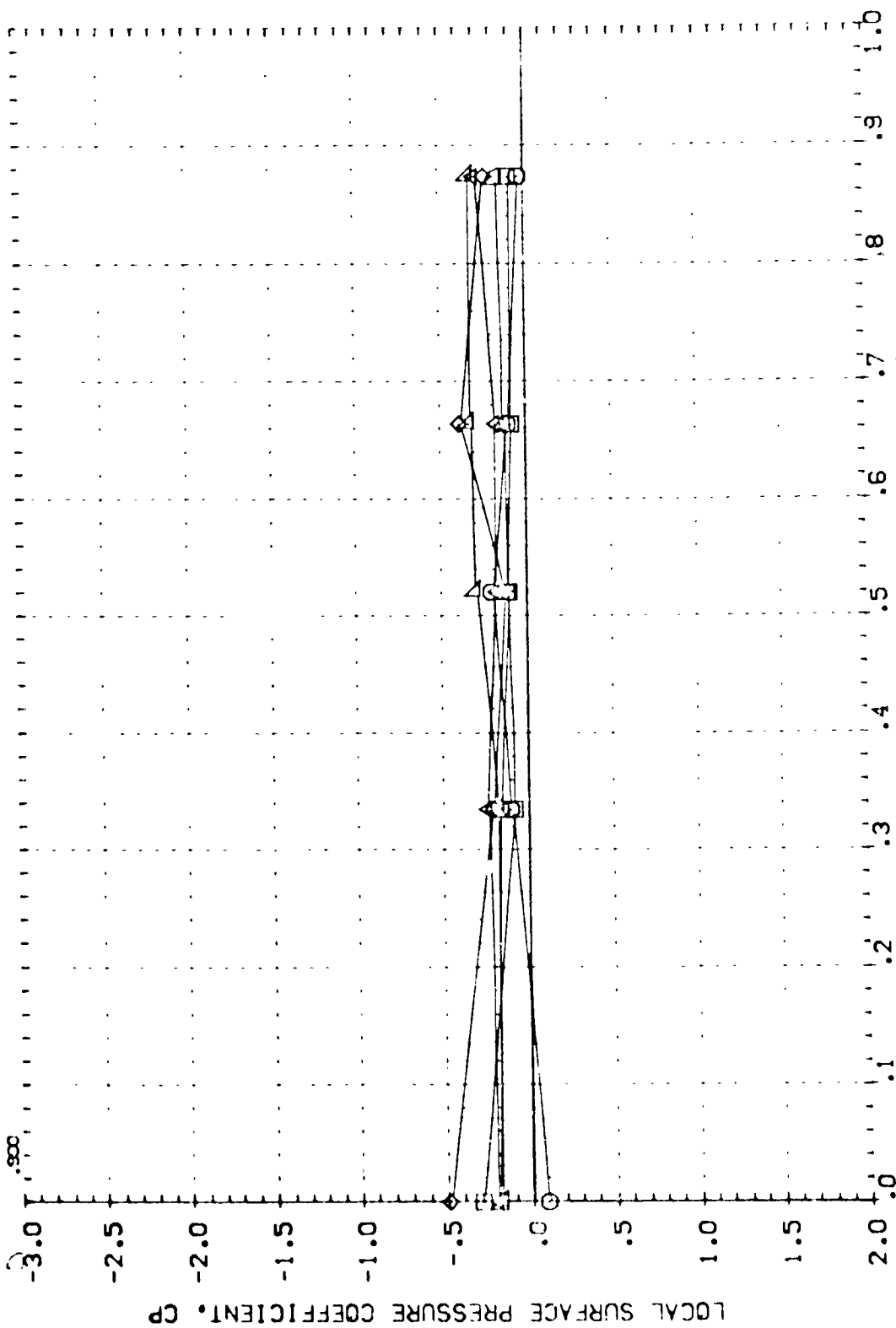
FIG 63 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH $\alpha=1.5^\circ$, $\beta=0^\circ$, $\delta=0^\circ$

CA57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL68)

PARAMETRIC VALUES
 .000 PTN/P 1.500
 .286 RDELAP -18.000
 .000 ELEVON

ALPHA .010
 MACH .165

SYMBOL X/C
 O .150
 O .300
 O .450
 O .600
 O .750
 O .900



WING SPANWISE LOCATION, 2Y/B

FIG 63 WING LOWER SURFACE PRESSURE SPANWISE DISTR WITH J42, PTN/P=1.5, 0 ELEVON

| | | | |
|--------|------|--------|---------|
| BETA | .000 | PTN/P | 1.500 |
| H/B | .286 | BOFLAP | -10.000 |
| ELEVON | .000 | | |

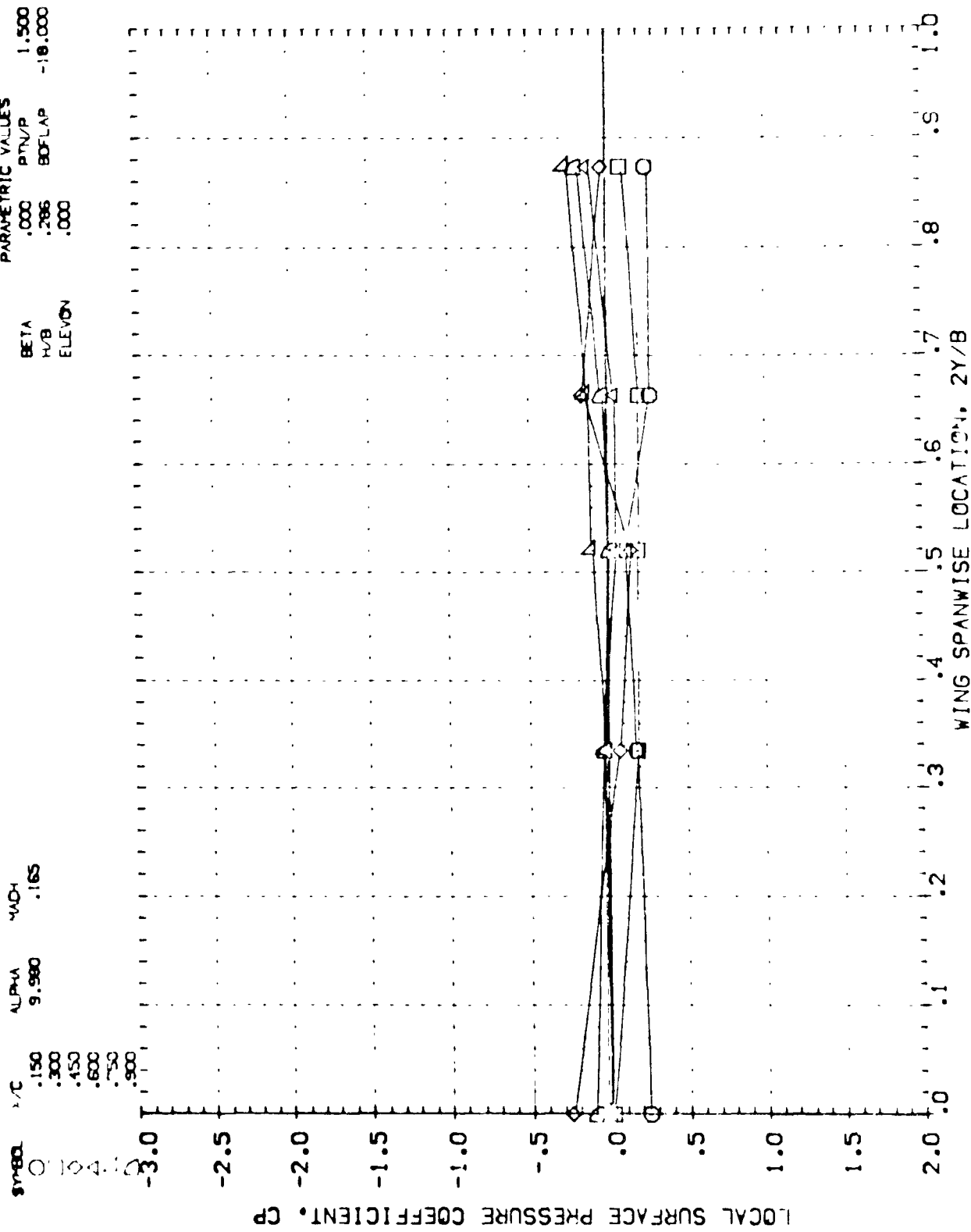


FIG 63 WING LOWER SURFACE PRESSURE SPANWISE DISTRIBUTION WITH $\alpha = 1.5^\circ$, $C_{L/EVEN}$

| SYMBOL | 2Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|--------|------|-------------------|-------|--------|------------------|
| | | | | BETA H/B | PTN/P | BOFLAP | 1.000 -10.000 |
| ○ | .000 | 10.000 | .165 | .000 | .000 | .000 | .000 |
| ○ | .304 | | | .035 | | | |
| ○ | .570 | | | .000 | | | |
| ○ | .863 | | | | | | |
| ○ | .873 | | | | | | |

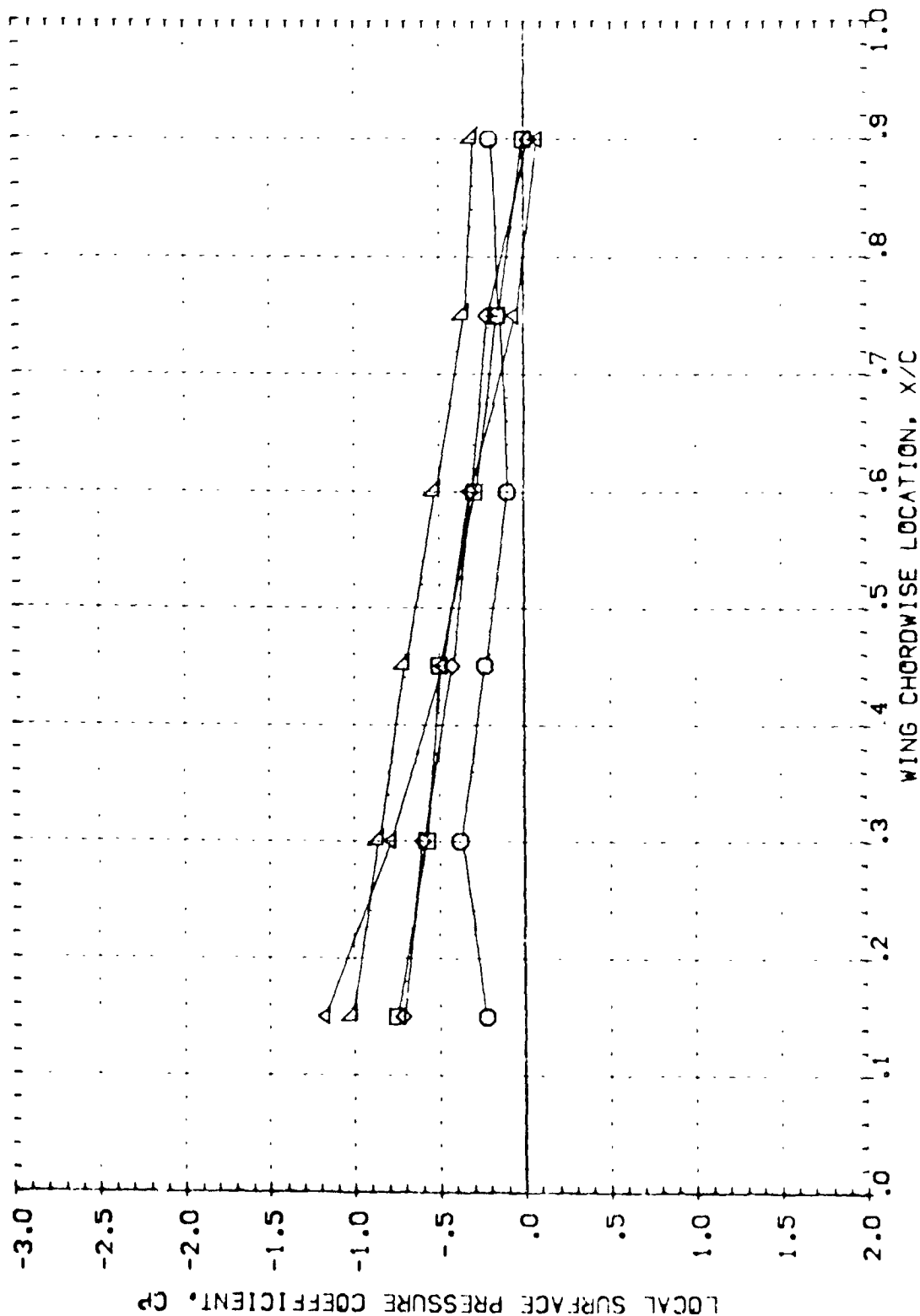


FIG 64 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 0 ELEVON

0457-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU06)

| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|---------------|-------|------|-------------------|-------|--------|--|
| | | | | BETA | PTN/P | BOFLAP | |
| ○ | .000 | .010 | .165 | .000 | .000 | 1.000 | |
| ◇ | .304 | | | .125 | | | |
| △ | .520 | | | .000 | | | |
| □ | .653 | | | | | | |
| ● | .873 | | | | | | |

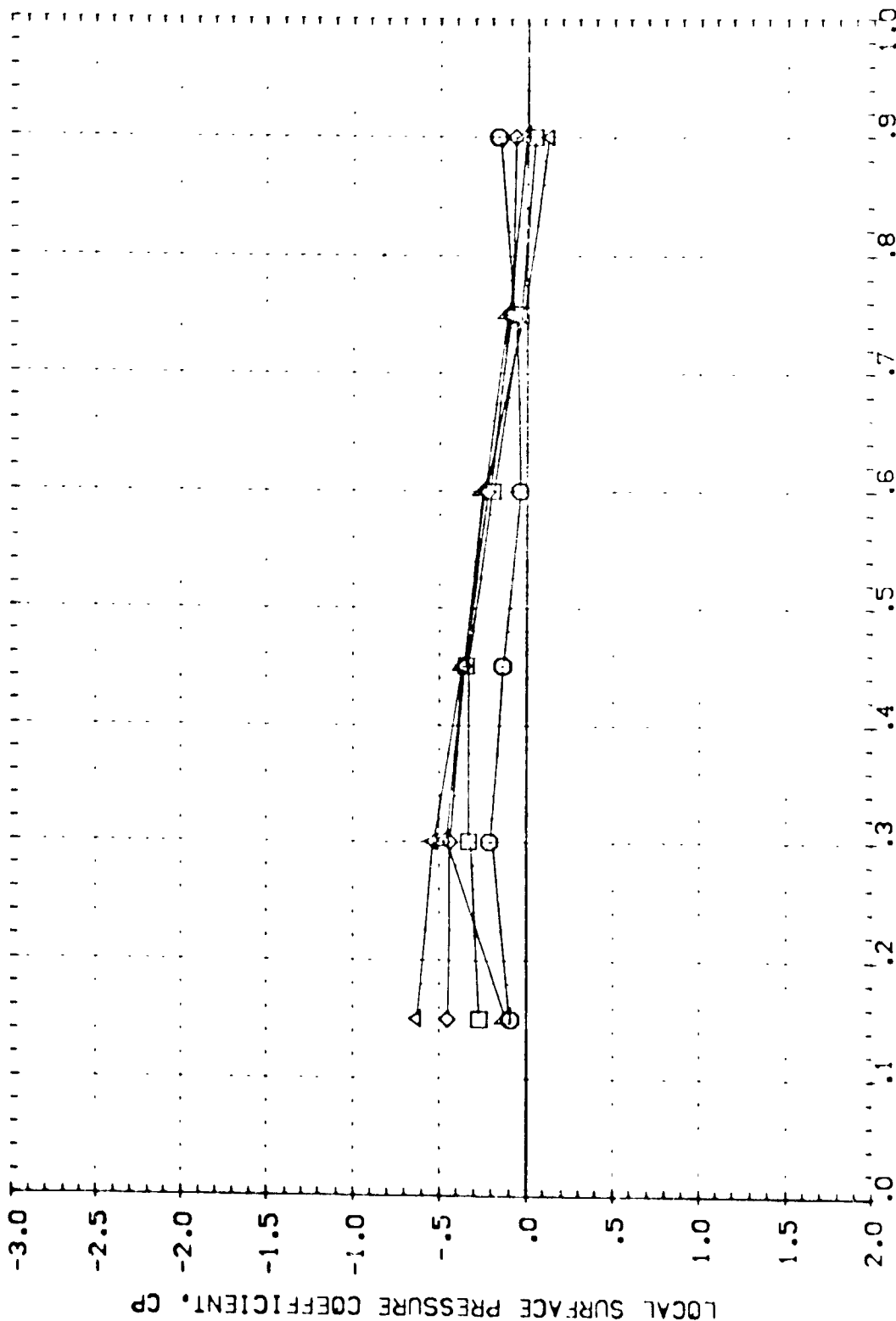


FIG 64 WING UPPER SURFACE PRESSURE CHORDWISE DISTRIBUTION, MACH, PTN/P=1.0, 0.0 ELEVON

| | | | | | | |
|-------|------------|--------|------|--------|-------|---------|
| SYNCH | 2 π /B | ALPHA | MACH | BETA | PTN/P | 1.000 |
| ○ | .000 | 10.015 | .165 | H/B | .000 | -18.000 |
| ○ | .304 | | | ELEVON | .125 | |
| ○ | .520 | | | | .000 | |
| ○ | .653 | | | | | |
| ○ | .877 | | | | | |

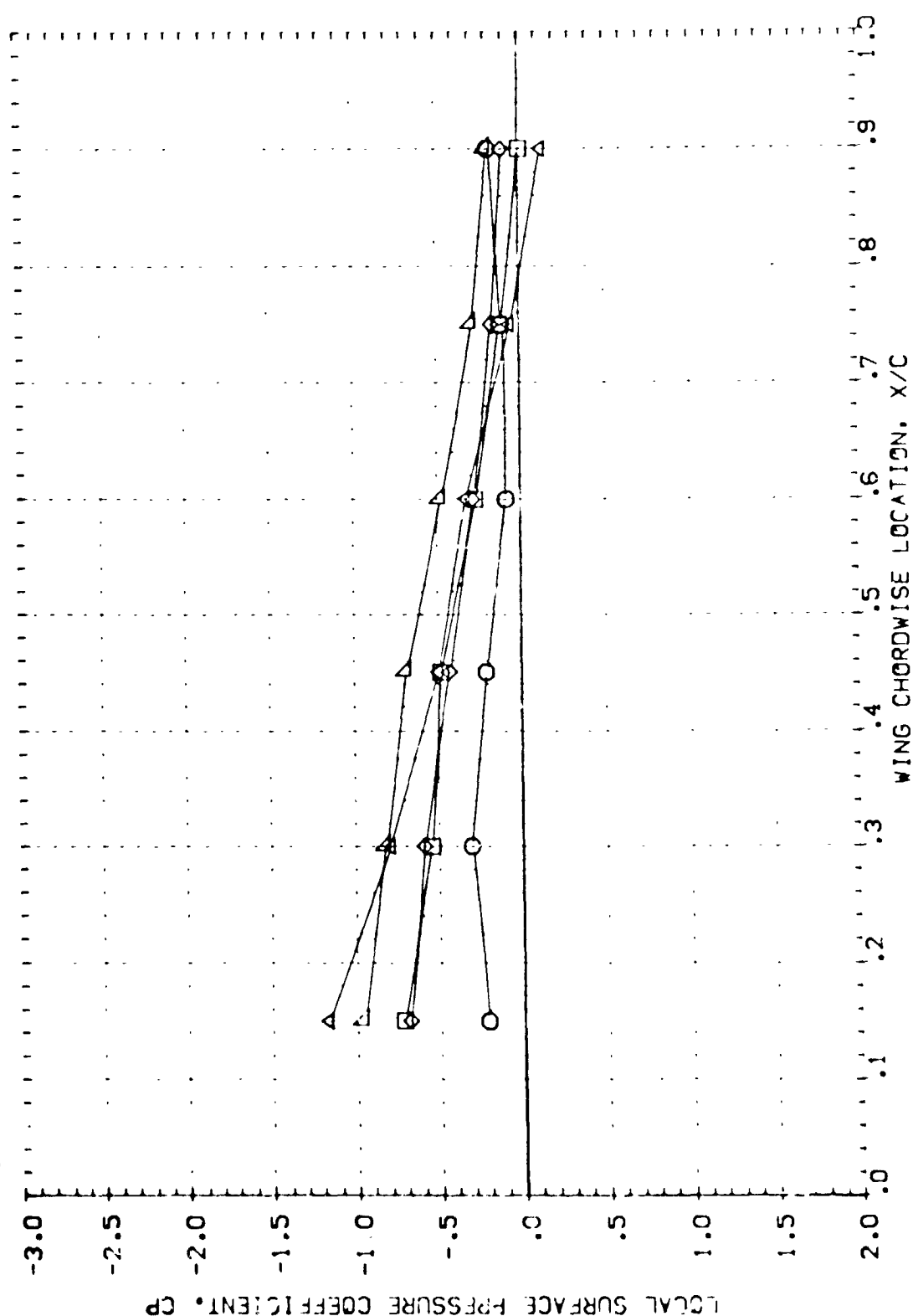


FIG 64 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 0 ELEVON

CA57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU15)

| | | | | | | | |
|--------|------|-------|------|------|-------|--------|--------|
| SYMBOL | 21/B | ALPHA | MACH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | .015 | .165 | .000 | 1.000 | | |
| ◇ | .304 | | | .000 | | | |
| △ | .500 | | | .000 | | | |
| □ | .663 | | | | | | |
| ● | .873 | | | | | | |

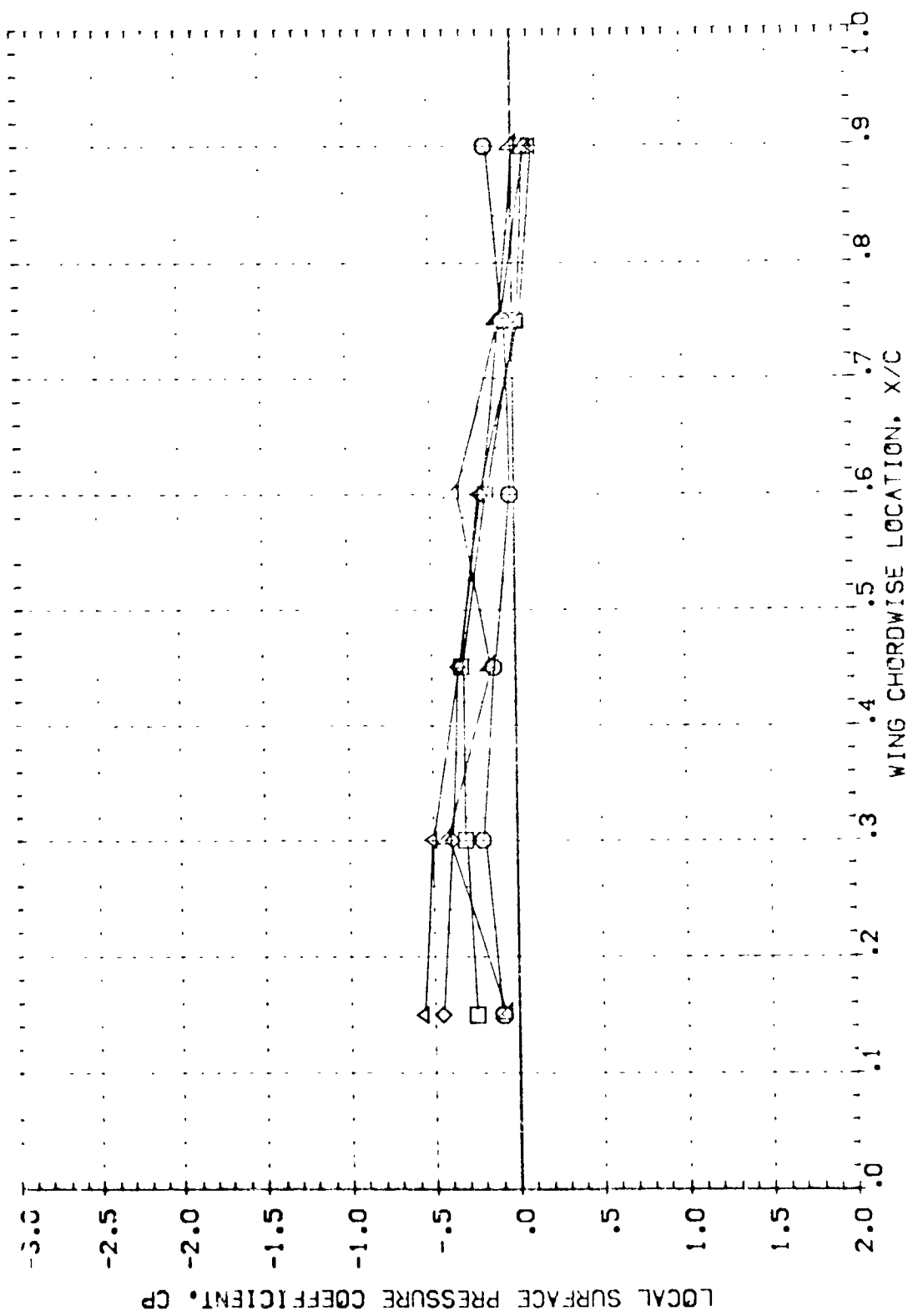


FIG 64 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (ROVU15)

| | | | | | | | |
|--------|------|--------|------|-------|-------|--------|--------|
| SYMBOL | 2Y/B | ALPHA | MACH | DELTA | PTN/P | BOFLAP | ELEVON |
| 0.000 | .000 | 10.015 | .165 | .000 | .000 | .000 | .000 |
| 1.000 | .304 | | | .000 | .000 | .000 | .000 |
| 2.000 | .500 | | | .000 | .000 | .000 | .000 |
| 3.000 | .663 | | | .000 | .000 | .000 | .000 |
| 4.000 | .873 | | | .000 | .000 | .000 | .000 |

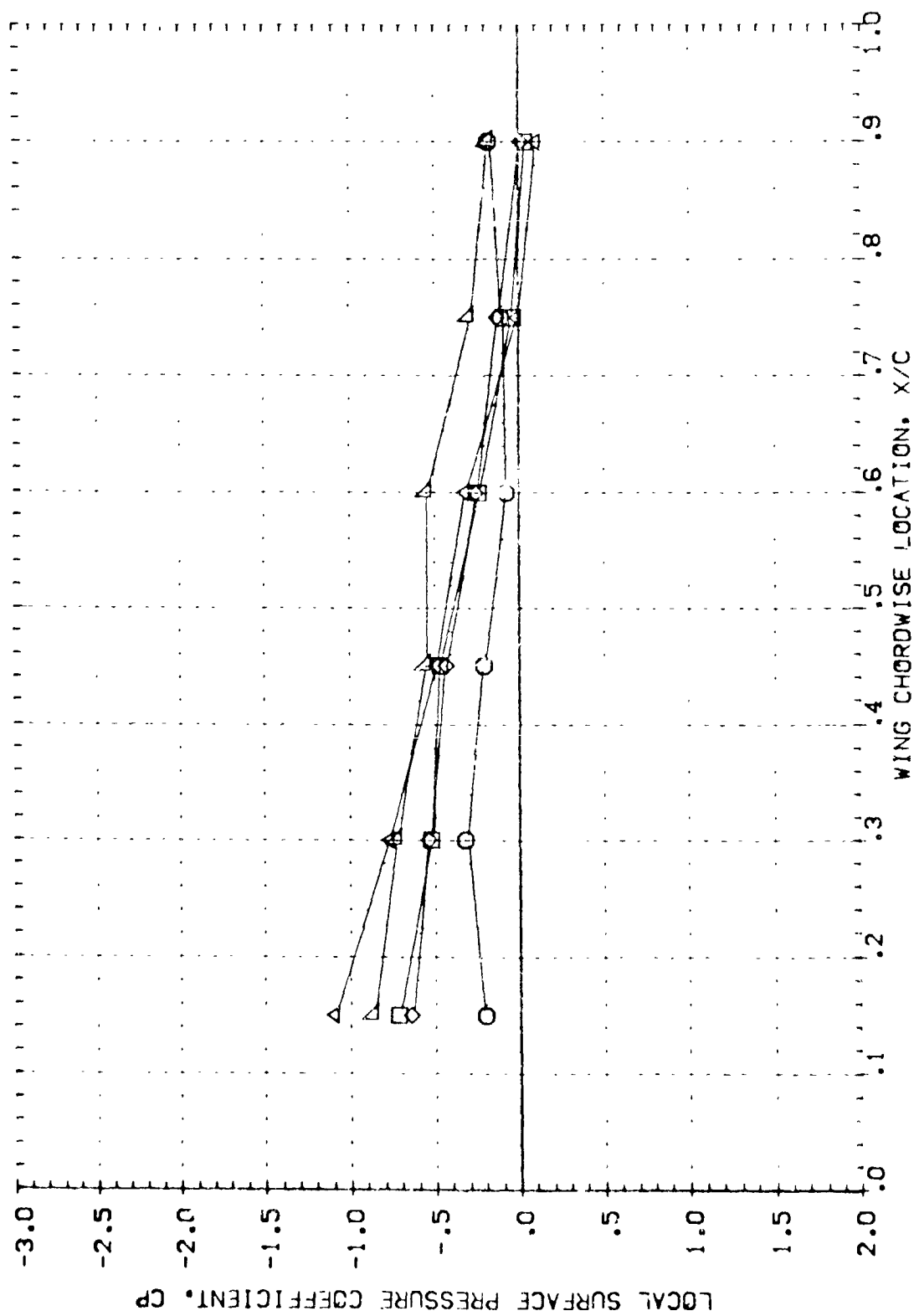


FIG 64 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B B16CSF1 J40 W87E16 WING UPPER SURFACE (RDVU04)

| SYMBOL | 2Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|--------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| 1 | .000 | 10.000 | .165 | .000 | .000 | .000 | 1.300 |
| 2 | .304 | | | .039 | | | -18.000 |
| 3 | .520 | | | | | | |
| 4 | .663 | | | | | | |
| 5 | .873 | | | | | | |

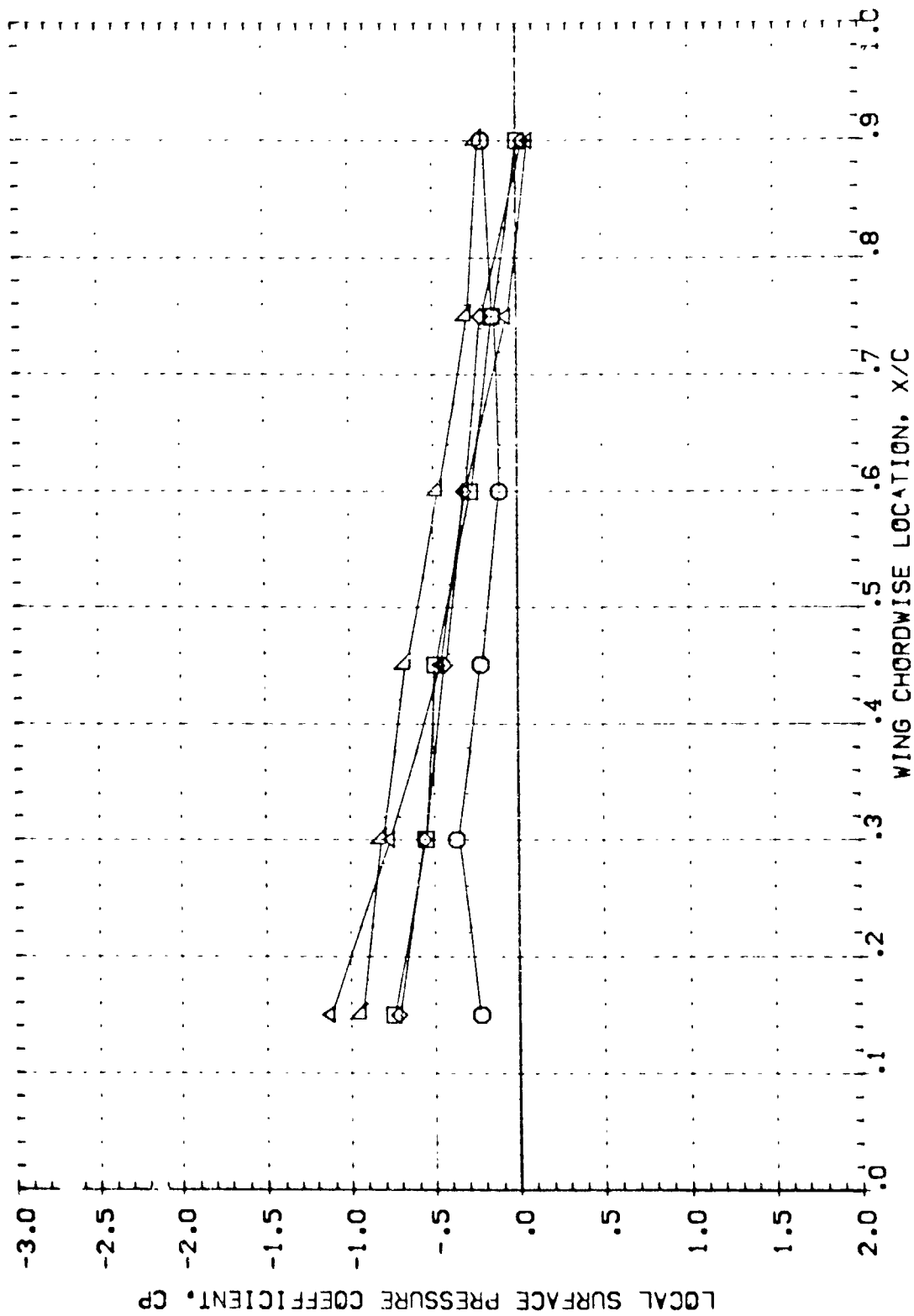


FIG 65 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU07)

| SYMBOL | 21/8 | ALPHA | MACH | BETA | PTN/P | BOFLAP | PARAMETRIC VALUES |
|--------|------|-------|------|--------|-------|--------|-------------------|
| ○ | .000 | .005 | .165 | H/8 | .000 | .000 | 1.300 |
| □ | .331 | | | ELEVON | .125 | | -10.000 |
| △ | .520 | | | | .000 | | |
| ◇ | .653 | | | | | | |
| ▽ | .873 | | | | | | |

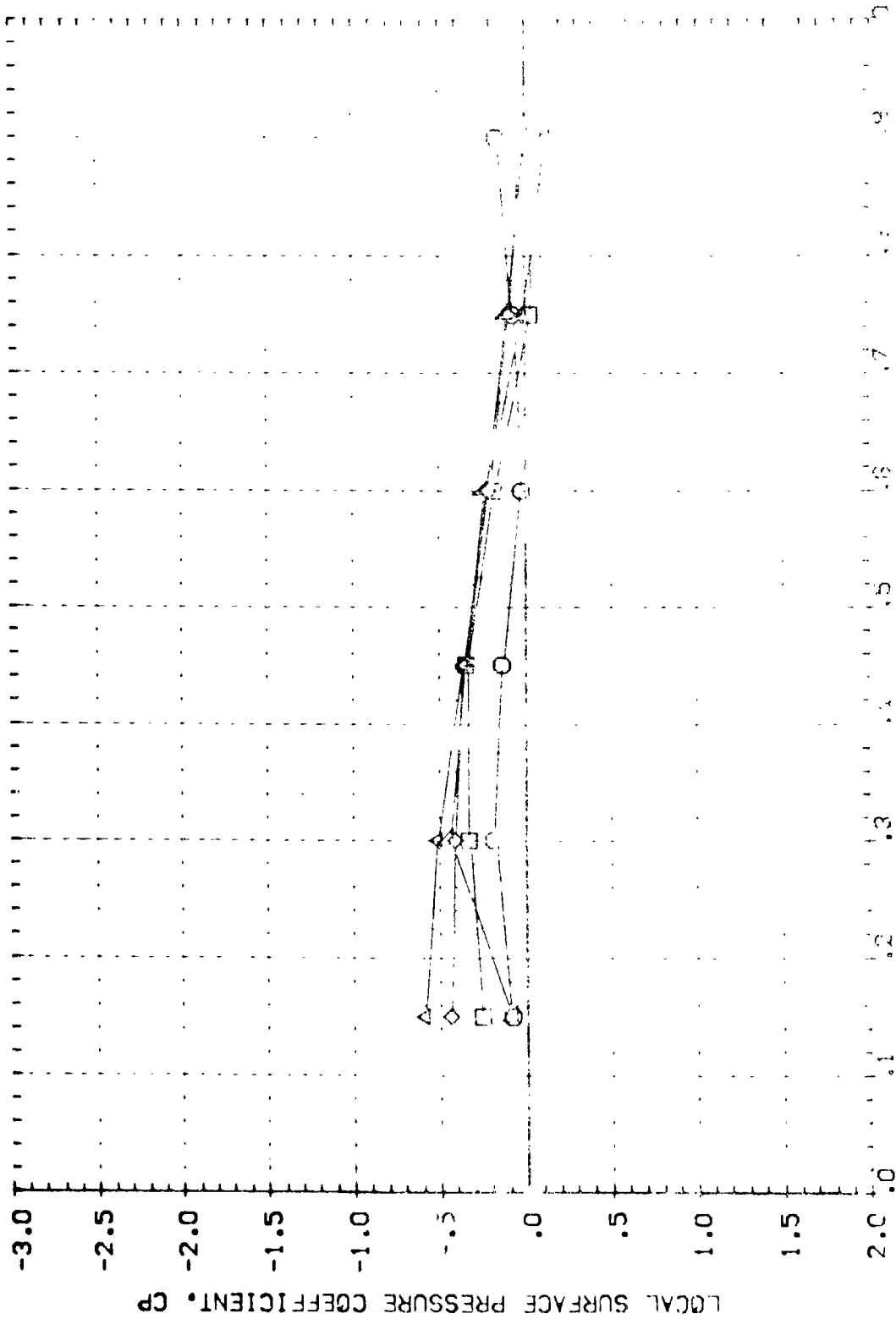


FIG 65 WING UPPER SURFACE PRESSURE COEFFICIENTS WING CHORDWISE LOCATION, X/C

CA57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU07)

| SYMBOL | Z1/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | ELEVON |
| ○ | .000 | 9.975 | .165 | .000 | .000 | 1.300 |
| ◇ | .334 | | | .125 | .000 | -18.000 |
| △ | .520 | | | .000 | | |
| □ | .663 | | | | | |
| △ | .873 | | | | | |

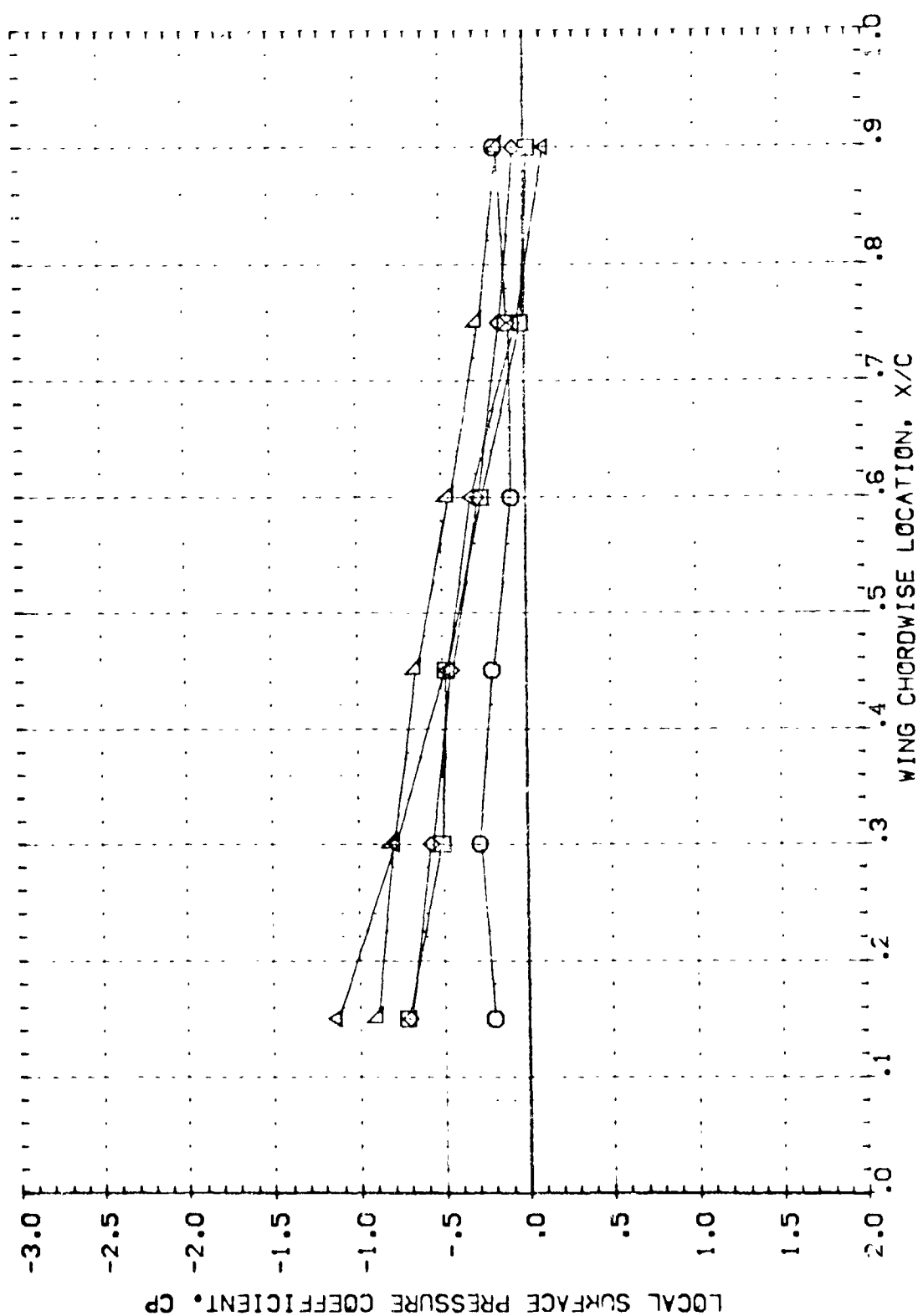


FIG 65 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J40 W87E18 WING JPPER SURFACE(RDVU17)

| | | | | | | | |
|--------|------|-------|------|--------|-------|--------|-------------------|
| SYMBOL | ZY/B | ALPHA | MACH | BETA | PTN/P | BOFLAP | PARAMETRIC VALUES |
| ○ | .000 | .005 | .165 | H/B | .000 | .286 | 1.300 |
| ◇ | .334 | | | ELEVON | .000 | .000 | -18.000 |
| □ | .520 | | | | | | |
| △ | .663 | | | | | | |
| ▽ | .873 | | | | | | |

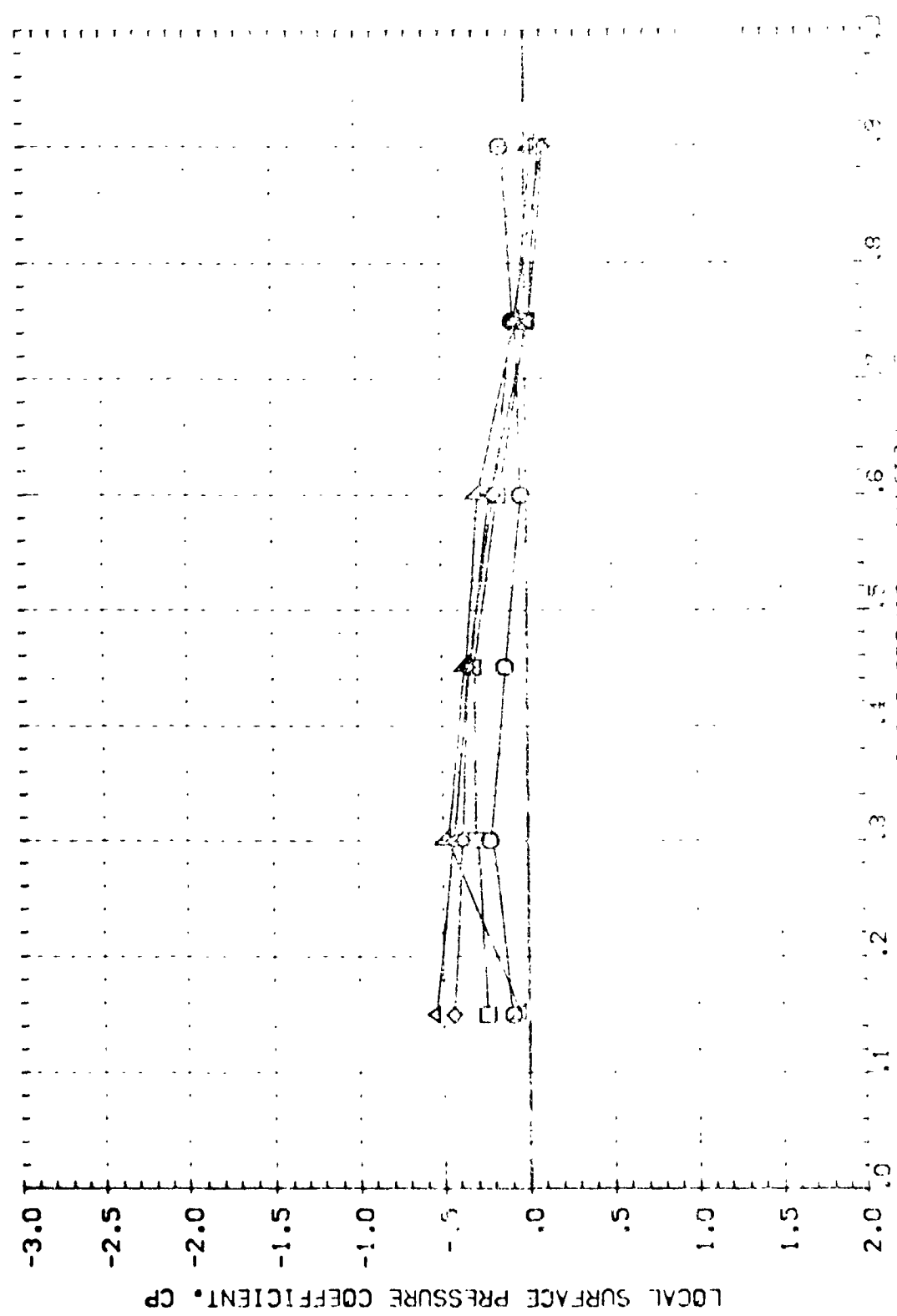


FIG 65 WING UPPER SURFACE PRESSURE COEFFICIENTS, $\alpha = 0^\circ, 10^\circ, 20^\circ, 30^\circ, 40^\circ$, $M = 0.165$, $Re = 1.3 \times 10^6$, $h/b = 0.005$, $BOFLAP = 28.6^\circ$, $PTN/P = 0.000$, $h/b = 0.000$

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU17)

| | | | | | |
|--------|------|-------|------|--------|---------------------|
| SYMBOL | 21/8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| 1 | .000 | 9.975 | .165 | H/8 | .000 P/N/P 1.300 |
| 2 | .304 | | | ELEVON | .286 BOFLAP -18.000 |
| 3 | .520 | | | | .000 |
| 4 | .653 | | | | |
| 5 | .873 | | | | |

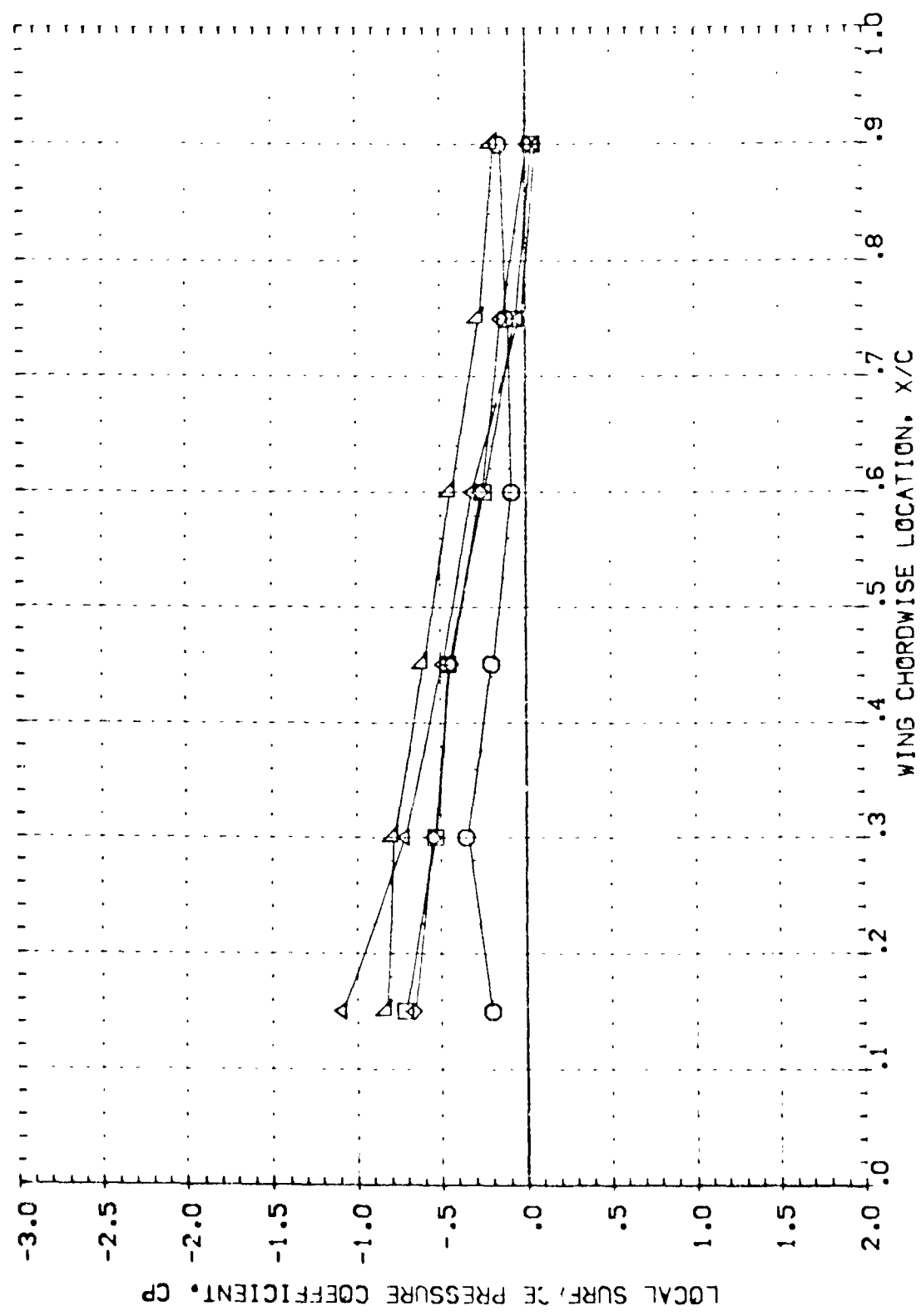


FIG 65 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, P/N/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (REV U05)

| PARAMETRIC VALUES | | BETA | | PTN/P | |
|-------------------|-------|------|--------|--------|---------|
| 21/B | ALPHA | H/B | ELEVON | BOFLAP | |
| .000 | 9.990 | | | .000 | 1.500 |
| .334 | | | | .009 | -18.000 |
| .520 | | | | .000 | |
| .653 | | | | | |
| .873 | | | | | |

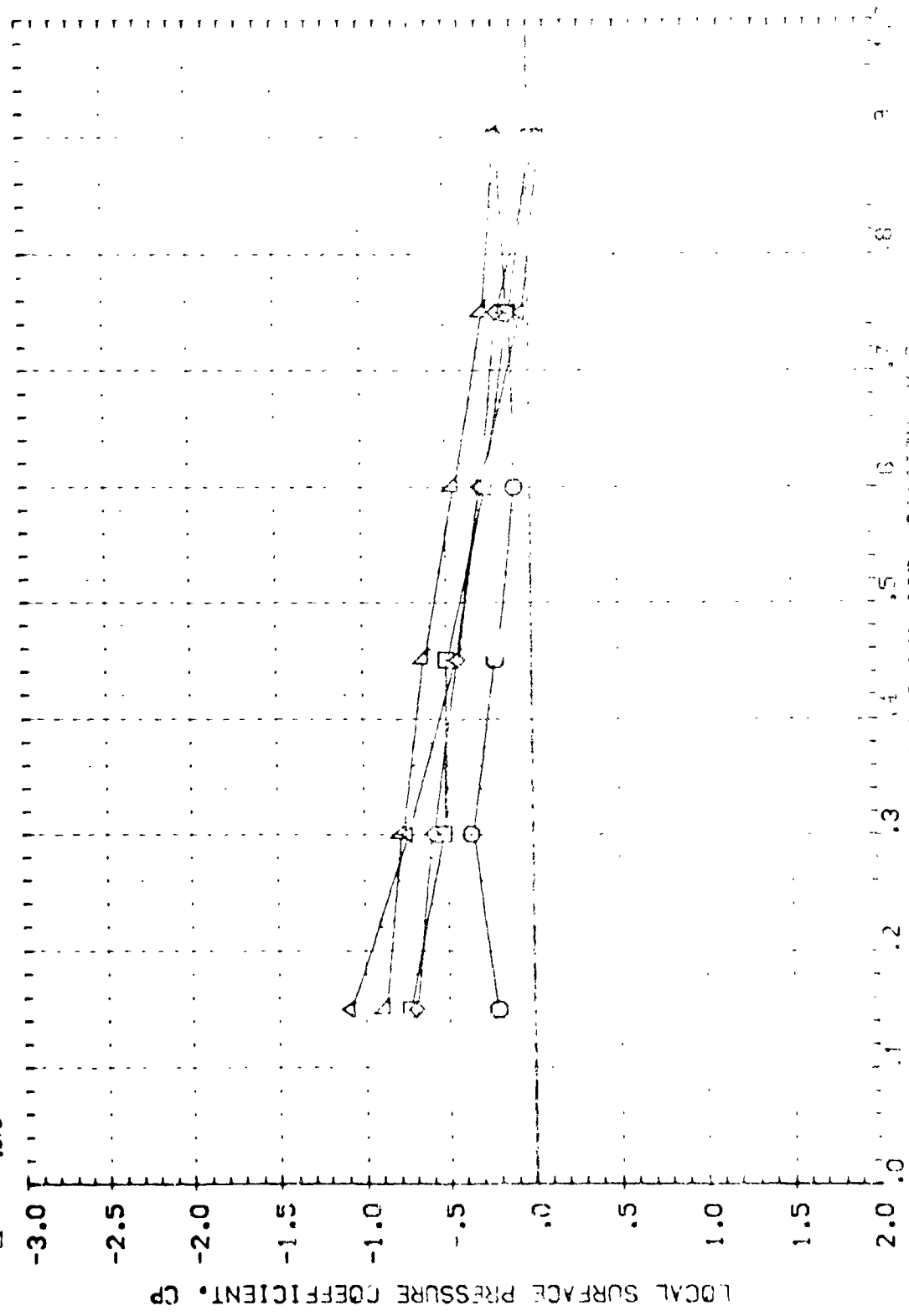


FIG 66 WING UPPER SURFACE ON-350E O-CROWISE DIS WITH 0% N/P-1.0 PLETS
WING CHORDWISE LOCATION, X/C

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVUC8J)

| | | | | | | |
|--------|------|-------|------|--------|-------------------|---------|
| SYMBOL | 2Y/B | ALPHA | MACH | BETA | PARAMETRIC VALUES | |
| | .000 | -.030 | .165 | H/B | PTN/P | 1.500 |
| 1 | .334 | | | ELEVON | BOFLAP | -13.000 |
| 2 | .520 | | | | | |
| 3 | .663 | | | | | |
| 4 | .873 | | | | | |

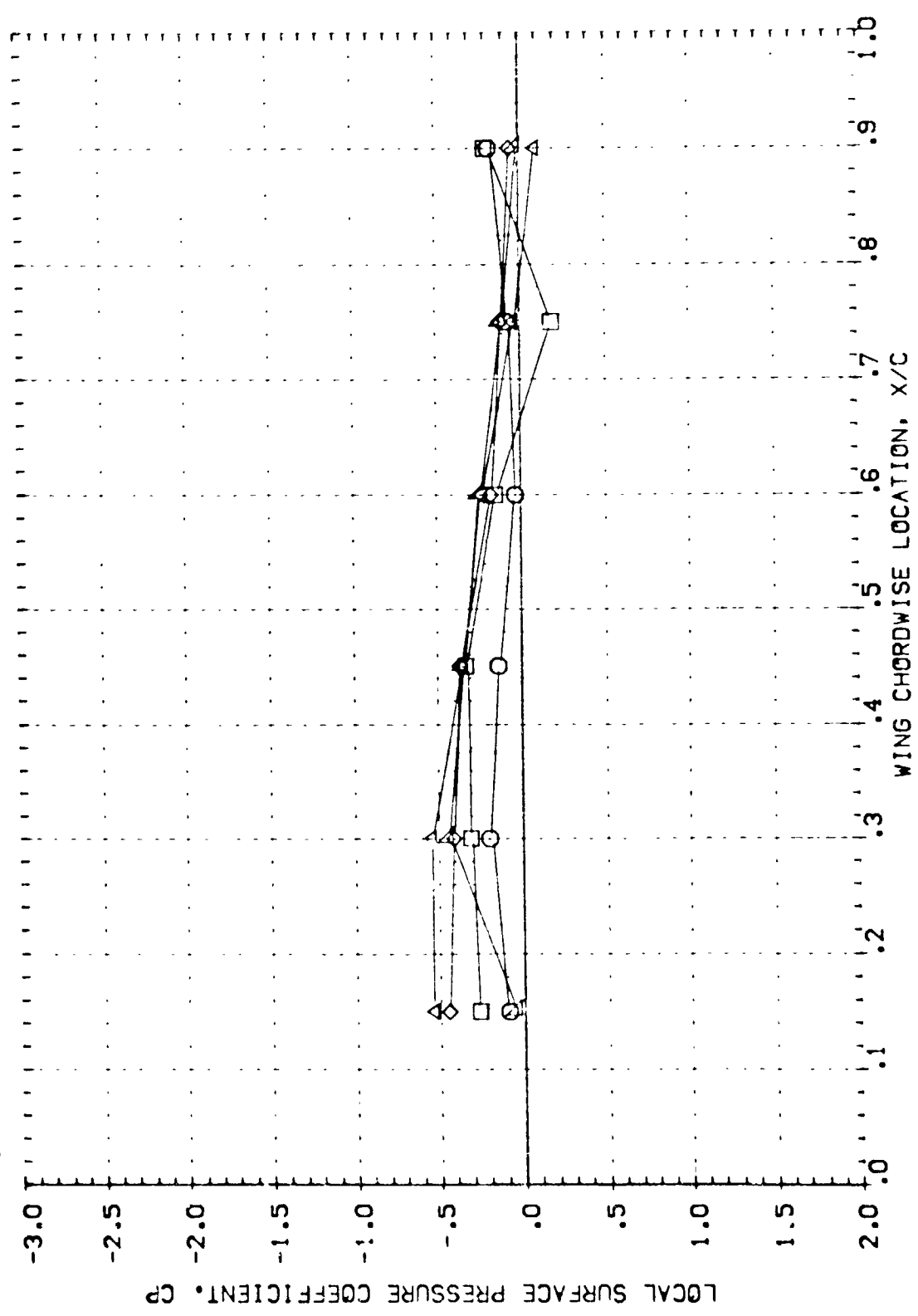


FIG 66 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 0 ELEVON

PAGE 301

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU08)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .125 3DFLAP -18.000
 ELEVON .000

SYMBOL 2V/B ALPHA MACH
 O .000 9.980 .165
 [] .304
 [] .520
 [] .663
 [] .873

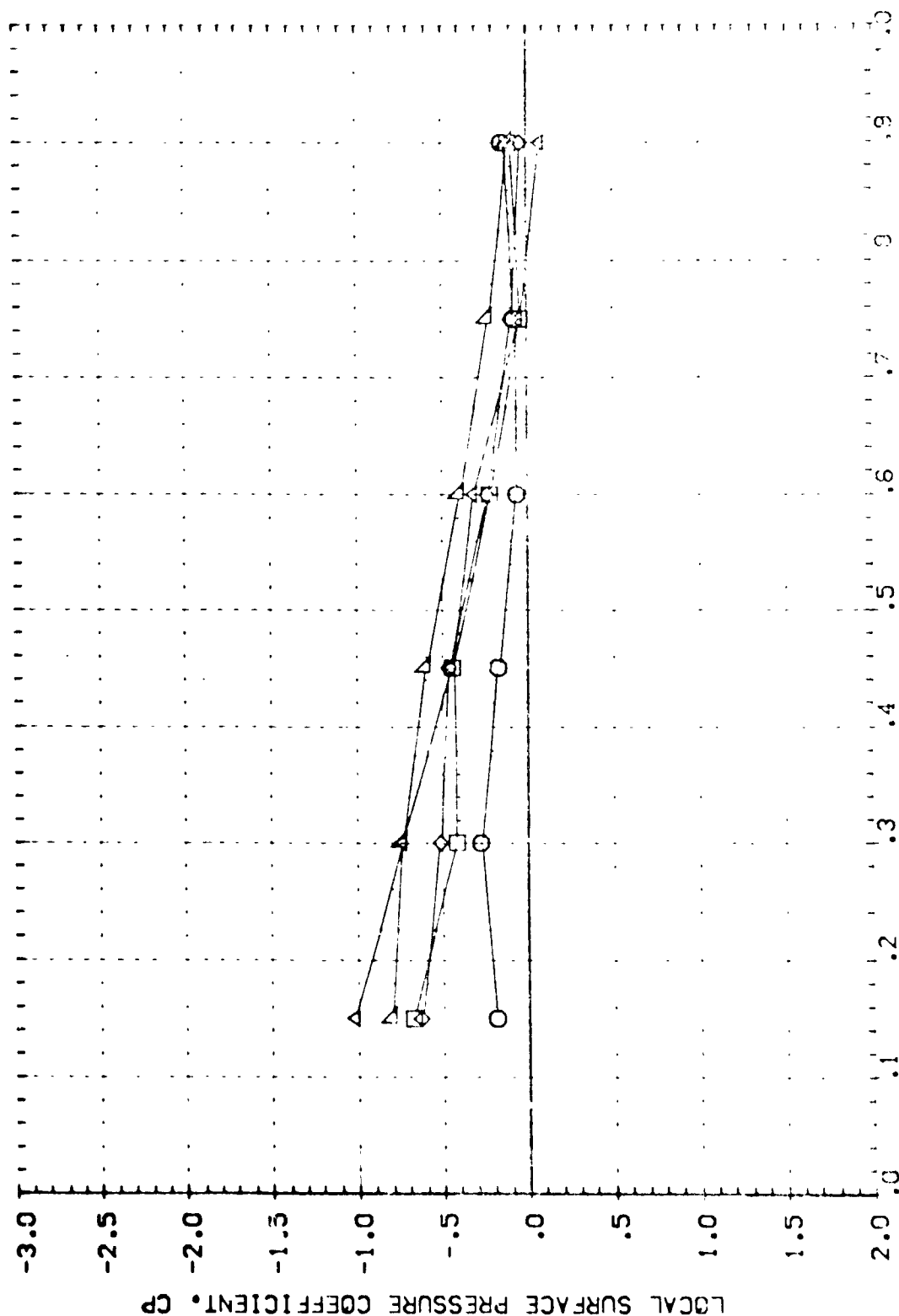


FIG 66 WING UPPER SURFACE PRESSURE COEFFICIENT WISE DIS. WITH J40, PTN/P=1.5, 0 ELEVON
 WING CHORDWISE LOCATION, X/C

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU16)

| SYMBOL | Z1/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|--------|---------|
| | | | | BETA | P1N/P | 1.500 |
| 0 | .000 | .015 | .165 | H/B | B7/LAP | -18.000 |
| 1 | .304 | | | ELEVON | | |
| 2 | .520 | | | | | |
| 3 | .653 | | | | | |
| 4 | .873 | | | | | |

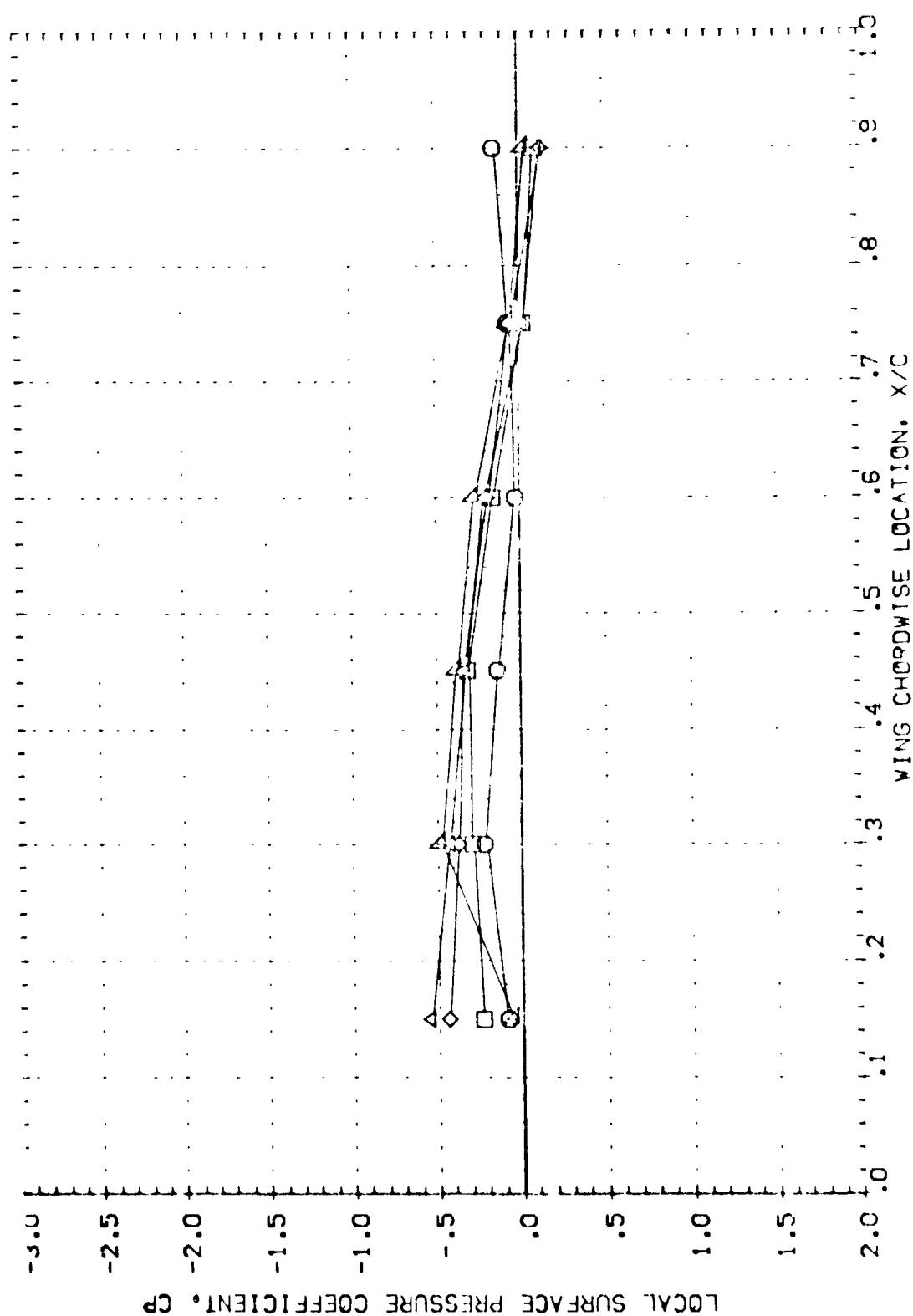


FIG 66 WING UPPER SURFACE PRESSURE COEFFICIENT WITH 240, P1N/P=1.5, 0 ELEVON

0457-B 3:605F J40 W87E18 WING UPPER SURFACE (RDVU16)

| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|---------------|--------|------|-------------------|--------|---------|
| | | | | BETA | PTN/P | 1.500 |
| O | .000 | 10.000 | .165 | H/B | BOFLAP | -18.000 |
| | .304 | | | ELEVON | | |
| | .500 | | | | | |
| | .663 | | | | | |
| | .873 | | | | | |

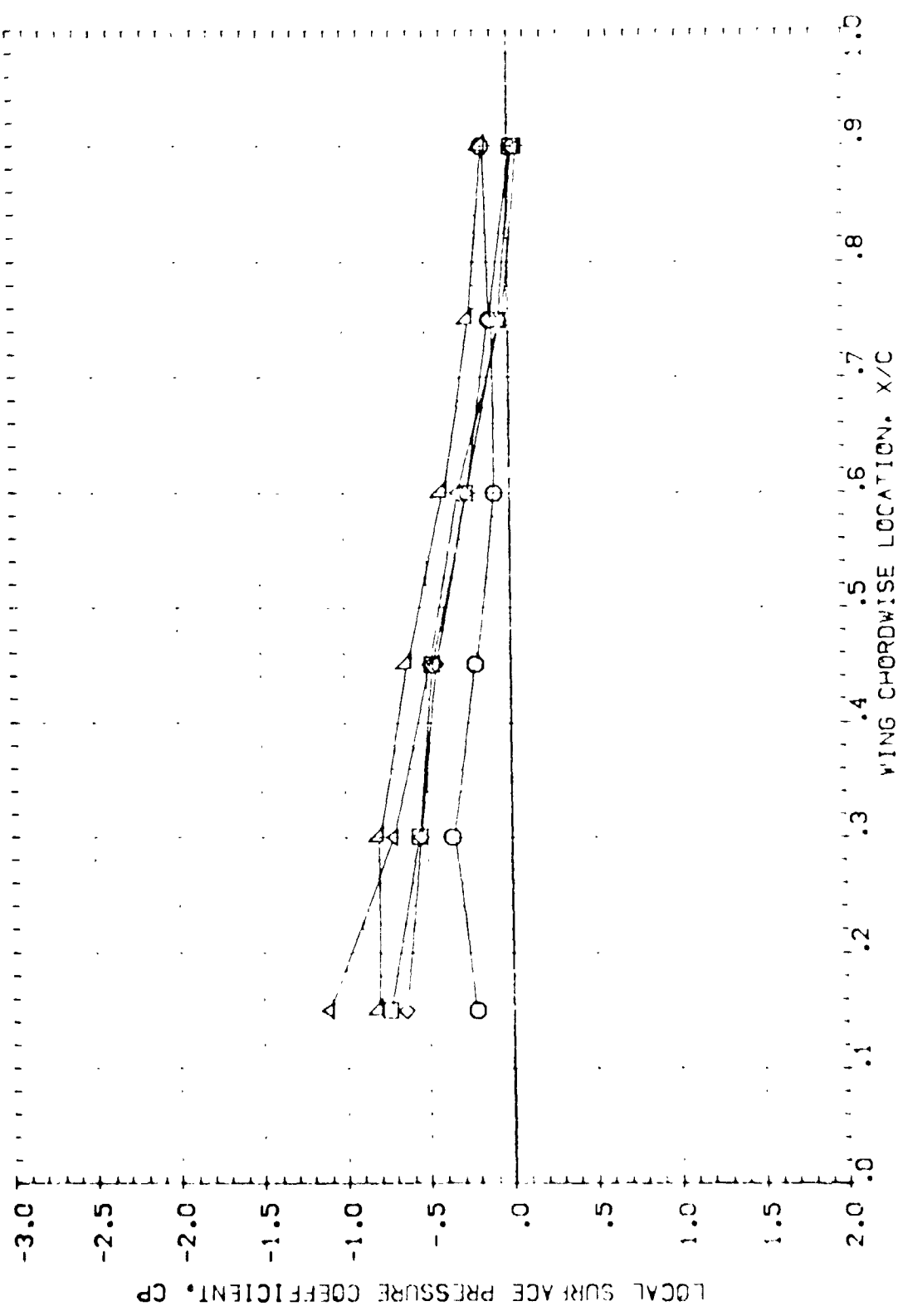


FIG 66 WING UPPER SURFACE PRESSURE COEFFICIENTS WITH J40, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU33)

| SYMBOL | 2N/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|--------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | 1,000 |
| ○ | .000 | 0.005 | .165 | M/B | | | -18,000 |
| △ | .334 | | | ELEVON | 15,000 | | |
| □ | .500 | | | | | | |
| × | .667 | | | | | | |
| ● | .833 | | | | | | |

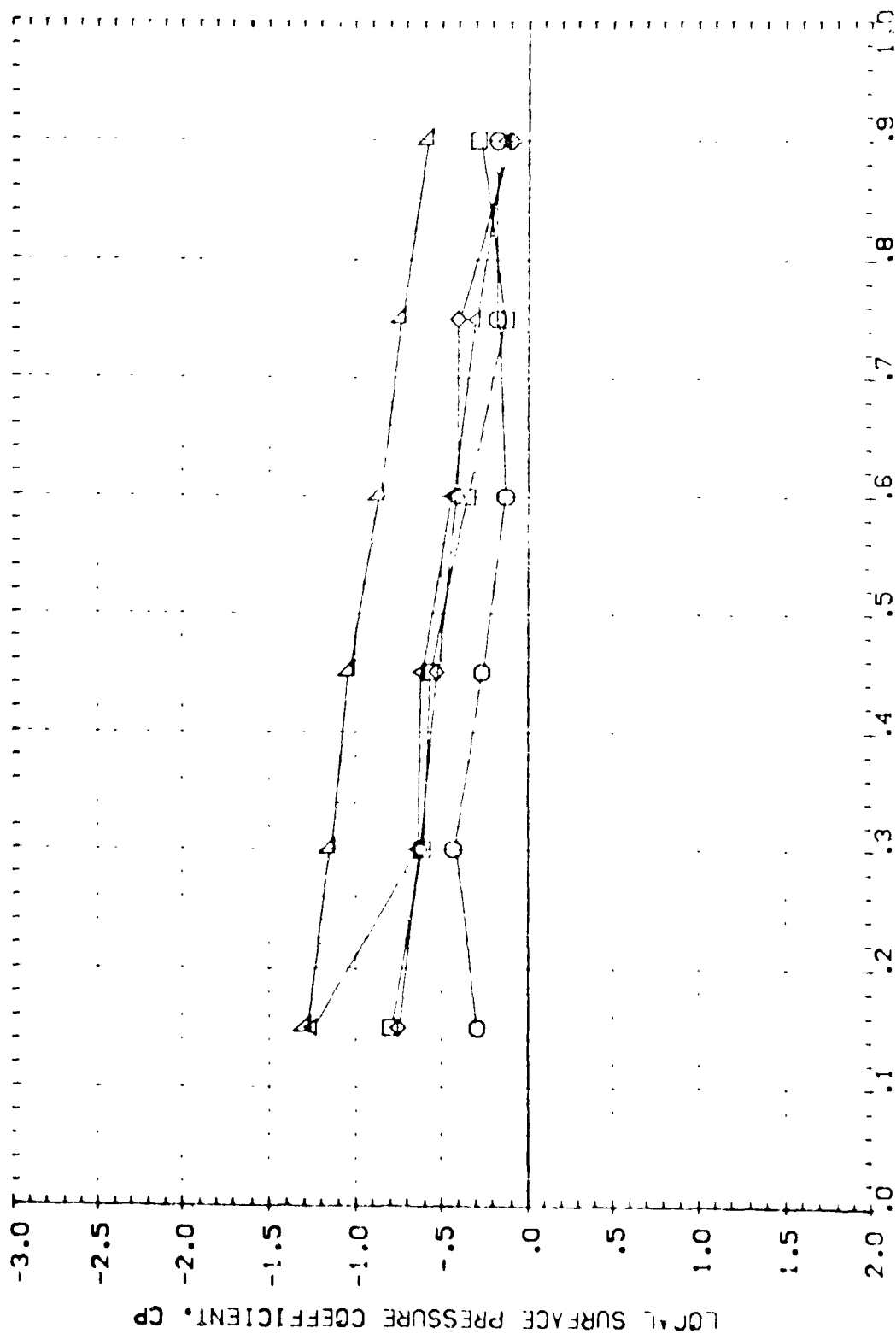


FIG 67 WING UPPER SURFACE PRESSURE COEFFICIENTS AT M=0.40, PTN/P=1.0, 0.5 ELEVON

CAS-9 B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU30)

| | | | | | | |
|--------|------|-------|------|--------|--------|---------|
| Symbol | 21/8 | ALPHA | MACH | BETA | PTA/P | 1,000 |
| ○ | .000 | -.000 | .165 | M 9 | .000 | -10,000 |
| △ | .304 | | | ELF/GH | .125 | |
| ◇ | .550 | | | | BOFLAP | |
| □ | .663 | | | | 15,000 | |
| ○ | .873 | | | | | |

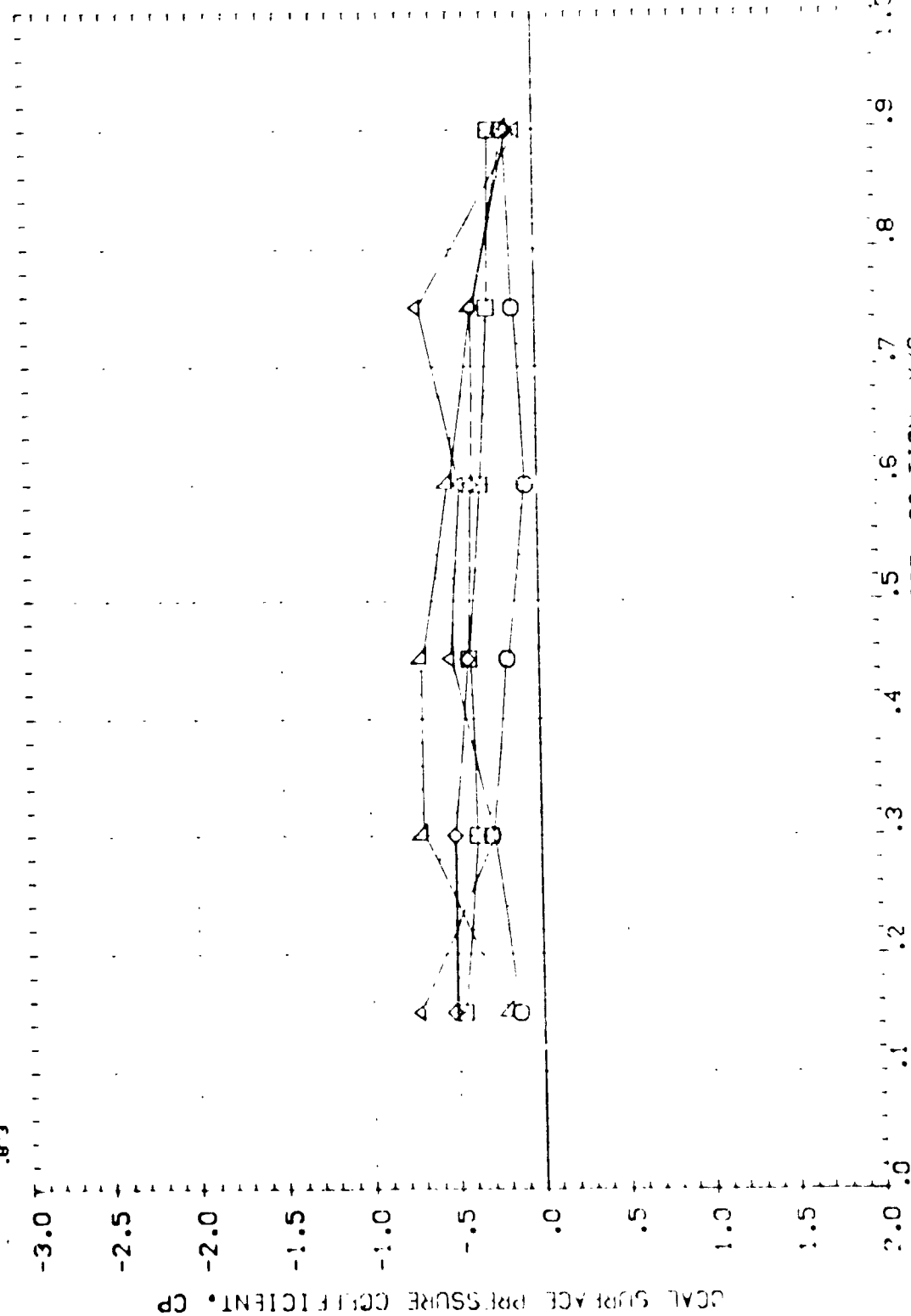


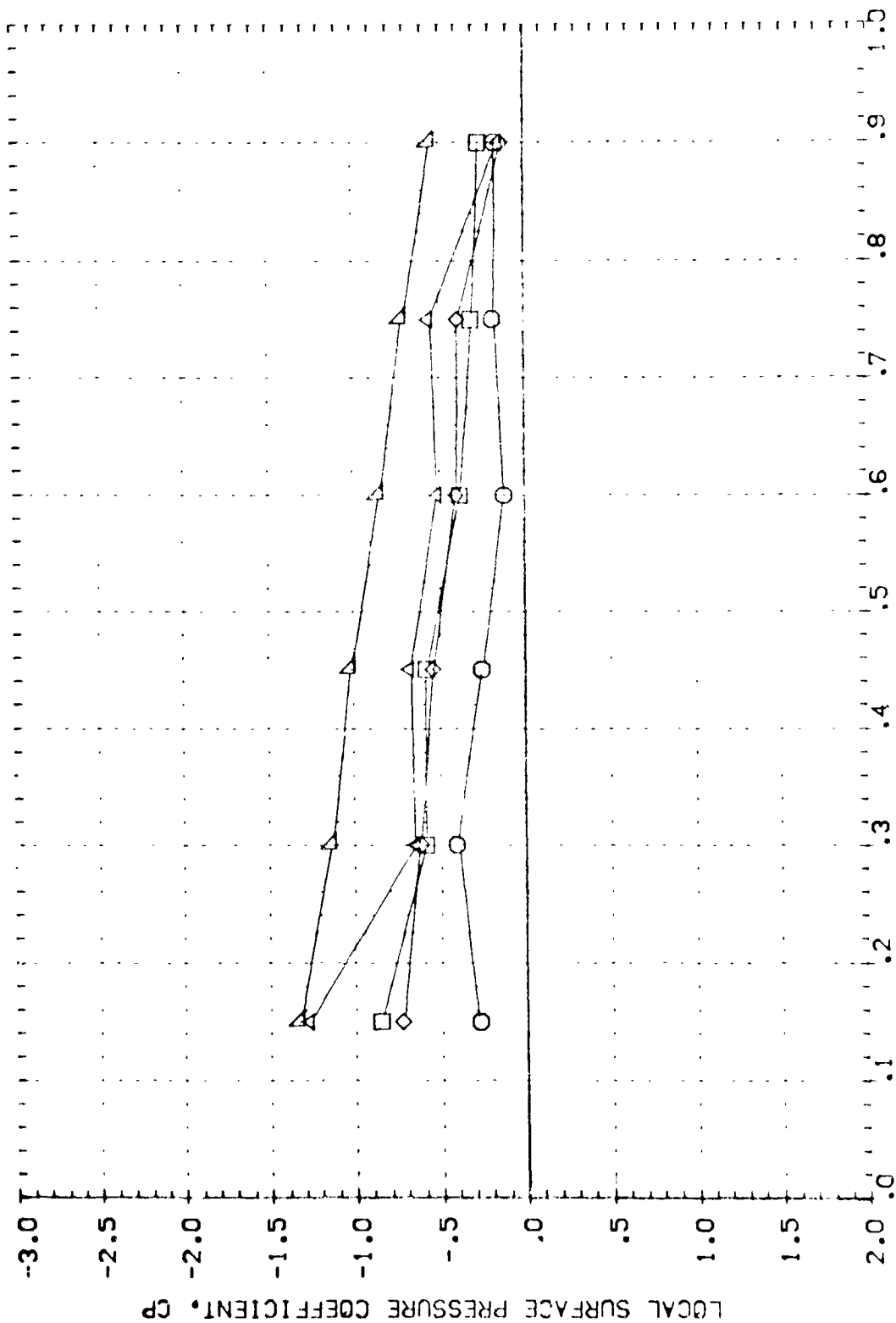
FIG 67 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTA/P = 1.0, 15, 0.0, 1.0, 1.5

0A57-B 61605F1 J40 W87E18 WING UPPER SURFACE (RDVU30)

SYMBOL ZN/B ALPHA MACH

.000 9.985 .165
 .334
 .570
 .663
 .8

PARAMETRIC VALUES
 BETA PTN/P
 4/B 15.000
 ELEVON 1.000
 80FLAP -18.000



WING CHORDWISE LOCATION, X/C

FIG 67 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 15 ELEVON

0A57-B 3:6C5F1 J40 W87E18 WING UPPER SURFACE (RDVU35)

| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|---------------|-------|------|-------------------|--------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | -.020 | .165 | | .000 | | 1.300 |
| △ | .324 | | | H/B | .286 | | -18.000 |
| ◇ | .520 | | | ELEVON | 15.000 | | |
| □ | .663 | | | | | | |
| ○ | .873 | | | | | | |

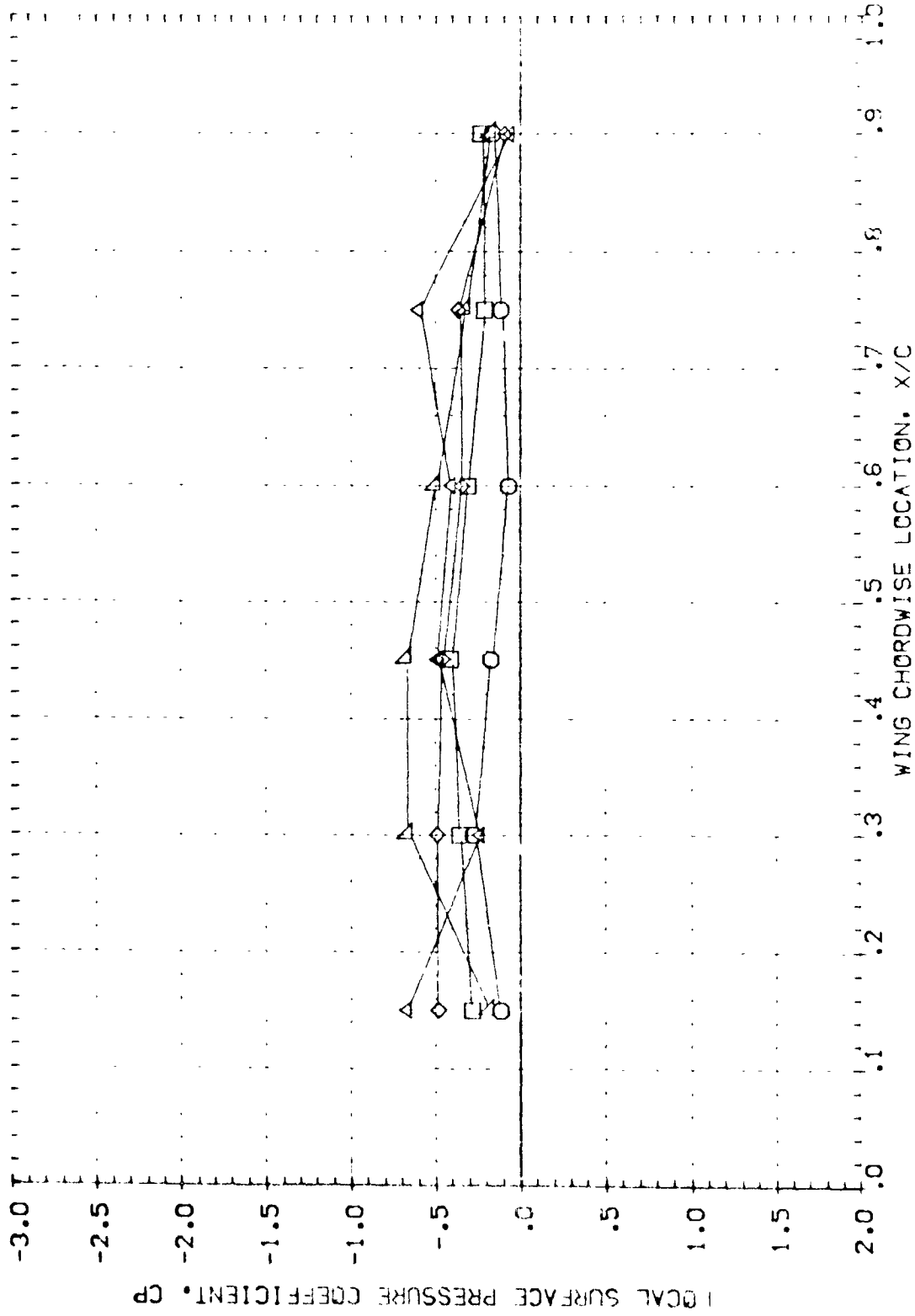


FIG 67 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 15 ELEVON

CA57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU35)

| STATION | Z/Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|---------|-------|-------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTR/P | BDFLAP | |
| 01041.1 | .000 | 9.985 | .165 | H/B | | | 1.300 |
| | .334 | | | ELEV | | | -18.000 |
| | .520 | | | | | | |
| | .653 | | | | | | |
| | .873 | | | | | | |

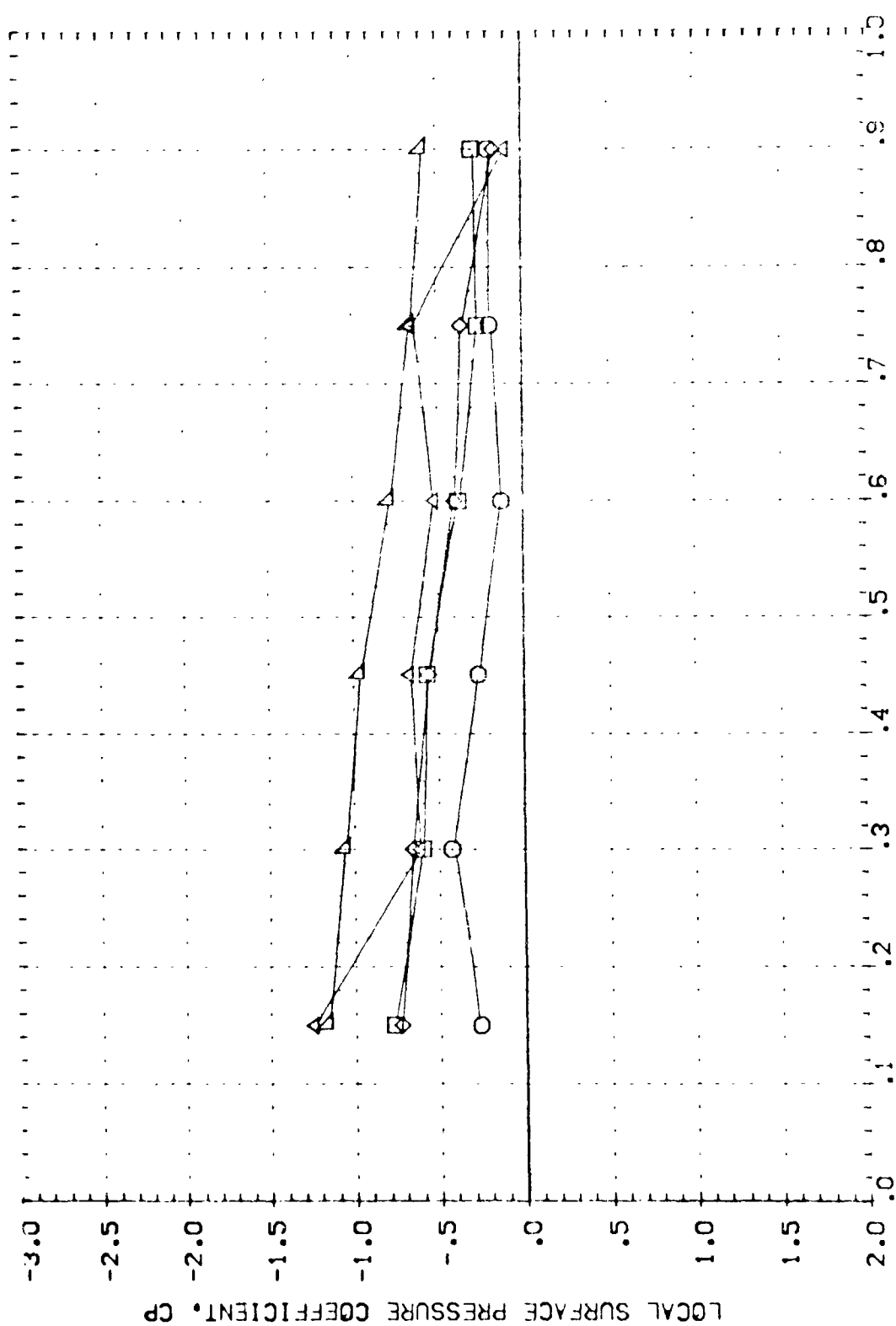


FIG 67 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTR/P=1.0, '5 ELEV

CA57-B 9.605F: J40 W87E18 WING UPPER SURFACE (RDVU32)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | |
| ○ | .000 | 9.990 | .165 | H/B | .000 | 15.000 | 1.300 |
| △ | .334 | | | ELEVON | .039 | | -18.000 |
| □ | .500 | | | | | | |
| ◇ | .663 | | | | | | |
| ● | .873 | | | | | | |

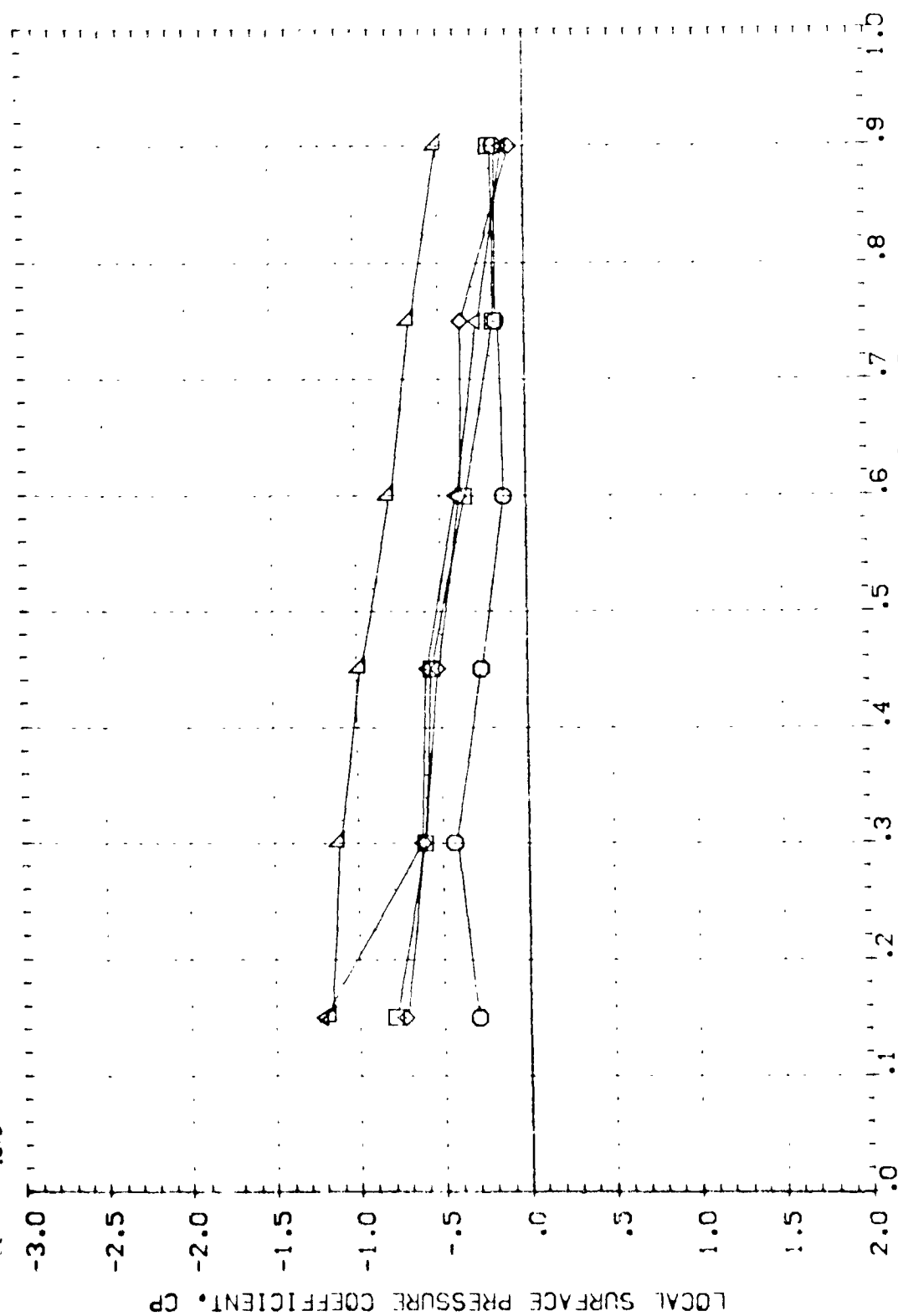


FIG 68 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU29)

| SYMBOL | Z/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|-----------------|
| | | | | BETA H/B | PTN/P | 1.300 BOFLAP |
| ○ | .000 | -.030 | .165 | 15.000 | .000 | 1.300 |
| ◇ | .304 | | | | .125 | 10.000 |
| △ | .530 | | | | | |
| □ | .603 | | | | | |
| × | .873 | | | | | |

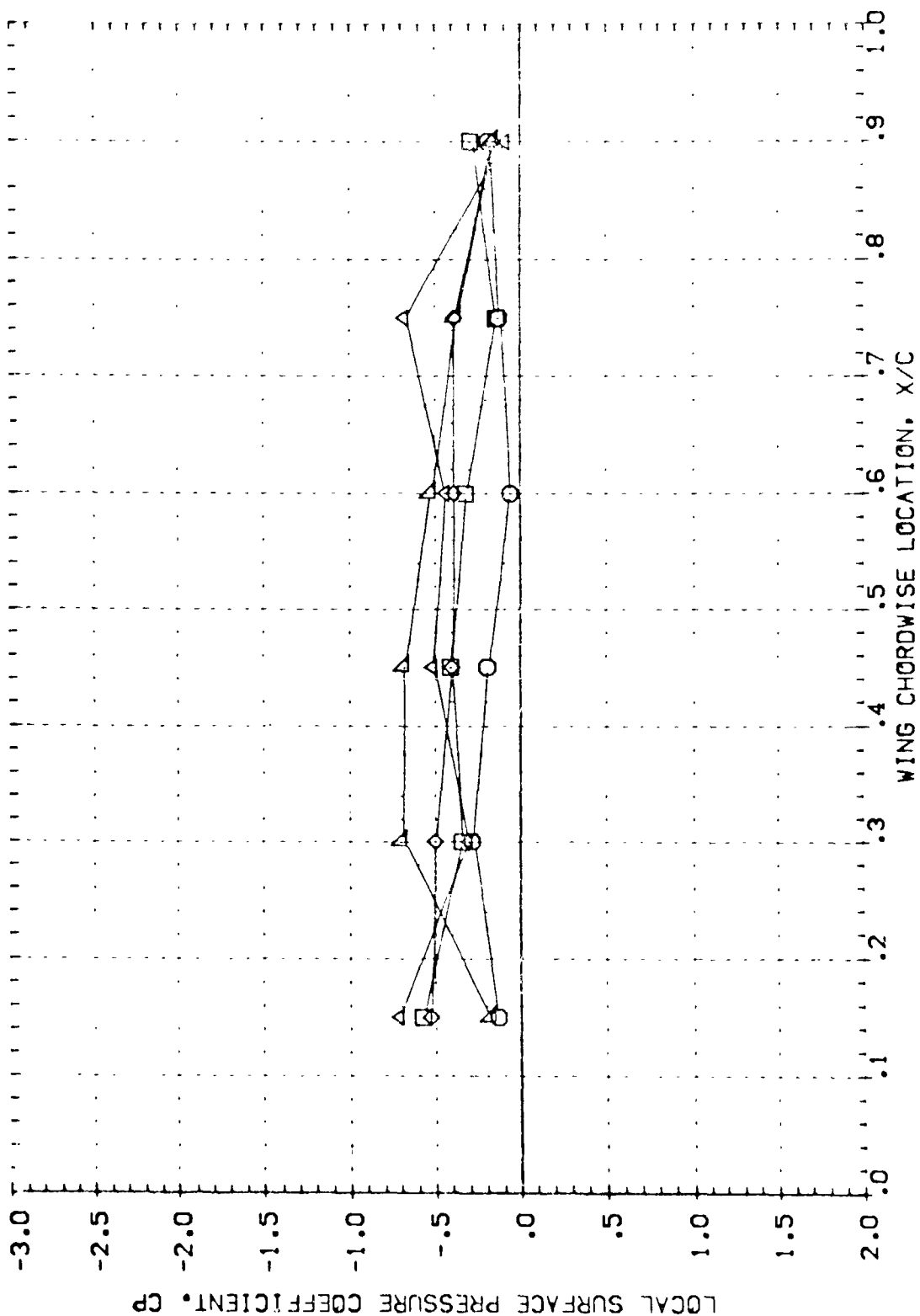


FIG 68 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU29)

| SPEED | 2V/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|-------|------|-------|------|-------------------|-------|--------|
| | | | | BETA | PTV/P | ELEVON |
| 0 | .000 | 8.965 | .165 | H/4 | .000 | 15.000 |
| 1 | .304 | | | ELEVON | .125 | 18.000 |
| 2 | .520 | | | | | |
| 3 | .683 | | | | | |
| 4 | .873 | | | | | |

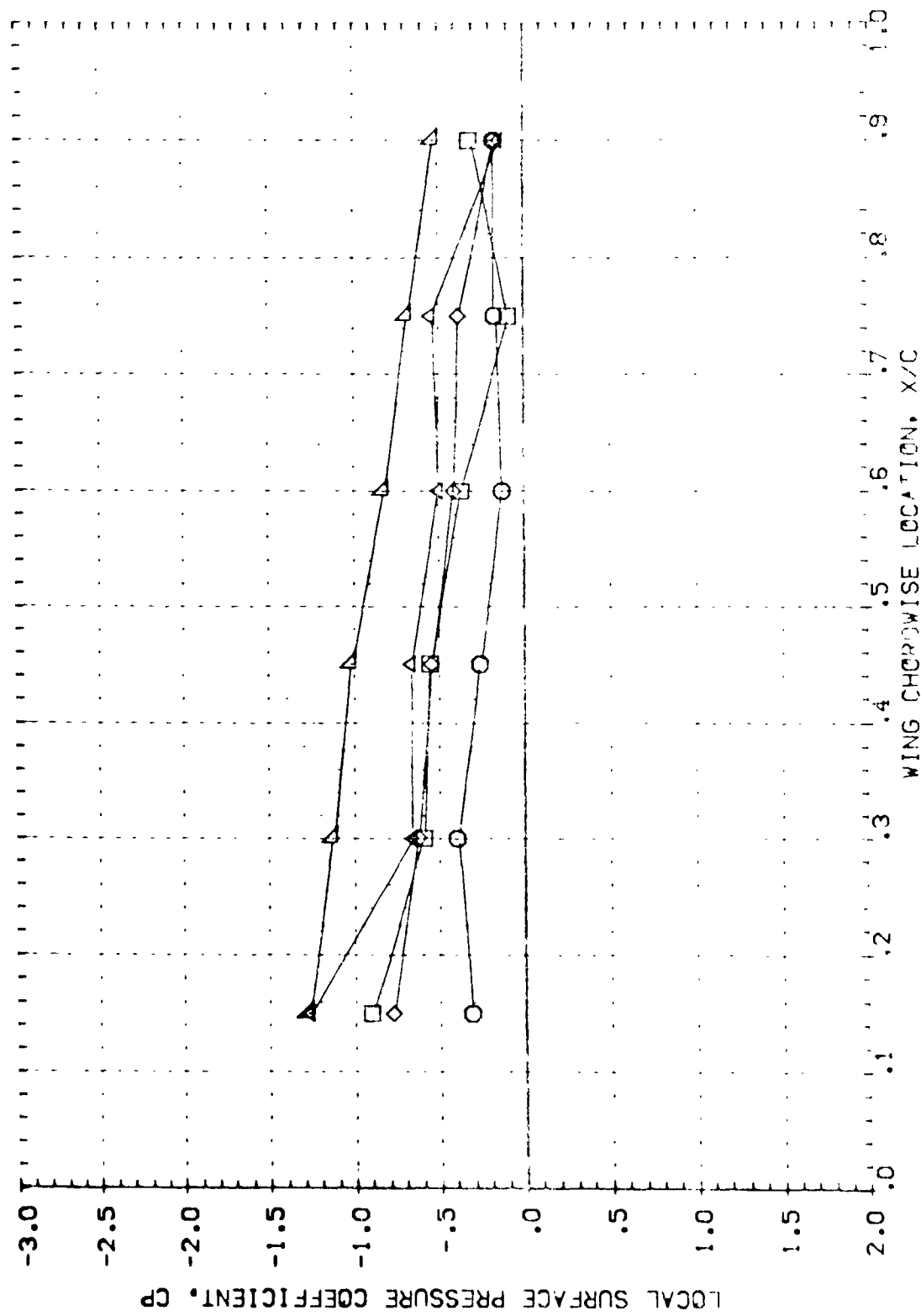


FIG 68 WING UPPER SURFACE PRESSURE COEFFICIENTS WITH 8.965 DEG, PTV/P=13.15 ELEVON

0A57-3 21605F1 J40 W87E18 WING UPPER SURFACE (RDVU35)

| | | | | | | |
|--------|------|-------|------|--------|------------|------|
| SYMBOL | 21/8 | ALPHA | WCH | BETA | PARAMETRIC | EX |
| | .000 | -.022 | .165 | H/B | .000 | .300 |
| | .334 | | | ELEVON | .296 | .000 |
| | .520 | | | | .300 | |
| | .663 | | | | | |
| | .873 | | | | | |

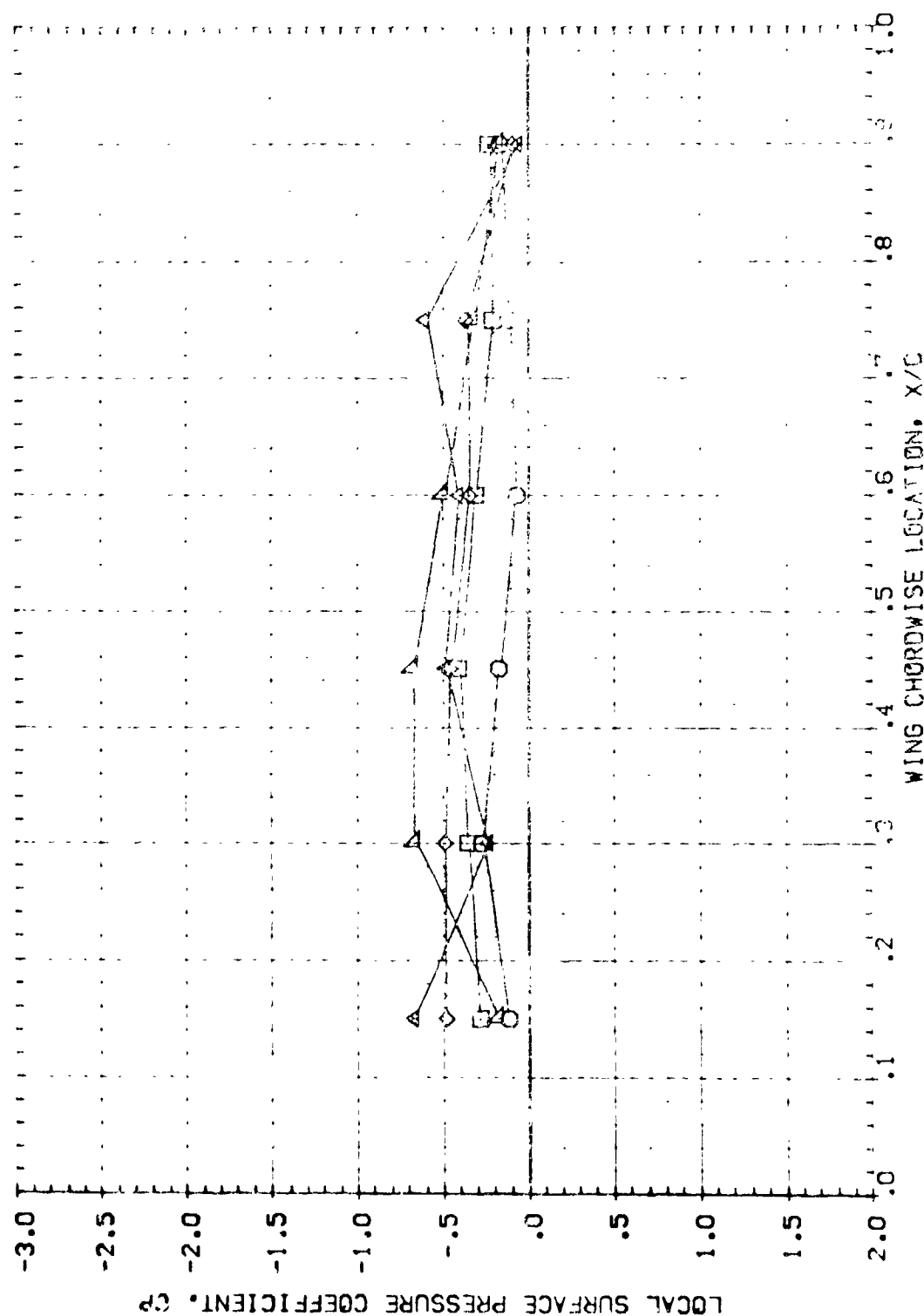


FIG. 10 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, $PN/P = 1.3, 1.5$ ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU35)

| STAG | $2\pi/\beta$ | ALPHA | MACH | BETA | PARAMETRIC VALUES | | |
|------|--------------|-------|------|--------|-------------------|---------------------|---------|
| 0 | .000 | 9.985 | .165 | H/B | .000 | PT ₀ /P | 1.000 |
| 1 | .334 | | | ELEVON | .286 | BOF ₁ /P | -18.000 |
| 2 | .520 | | | | 15.000 | | |
| 3 | .663 | | | | | | |
| 4 | .873 | | | | | | |

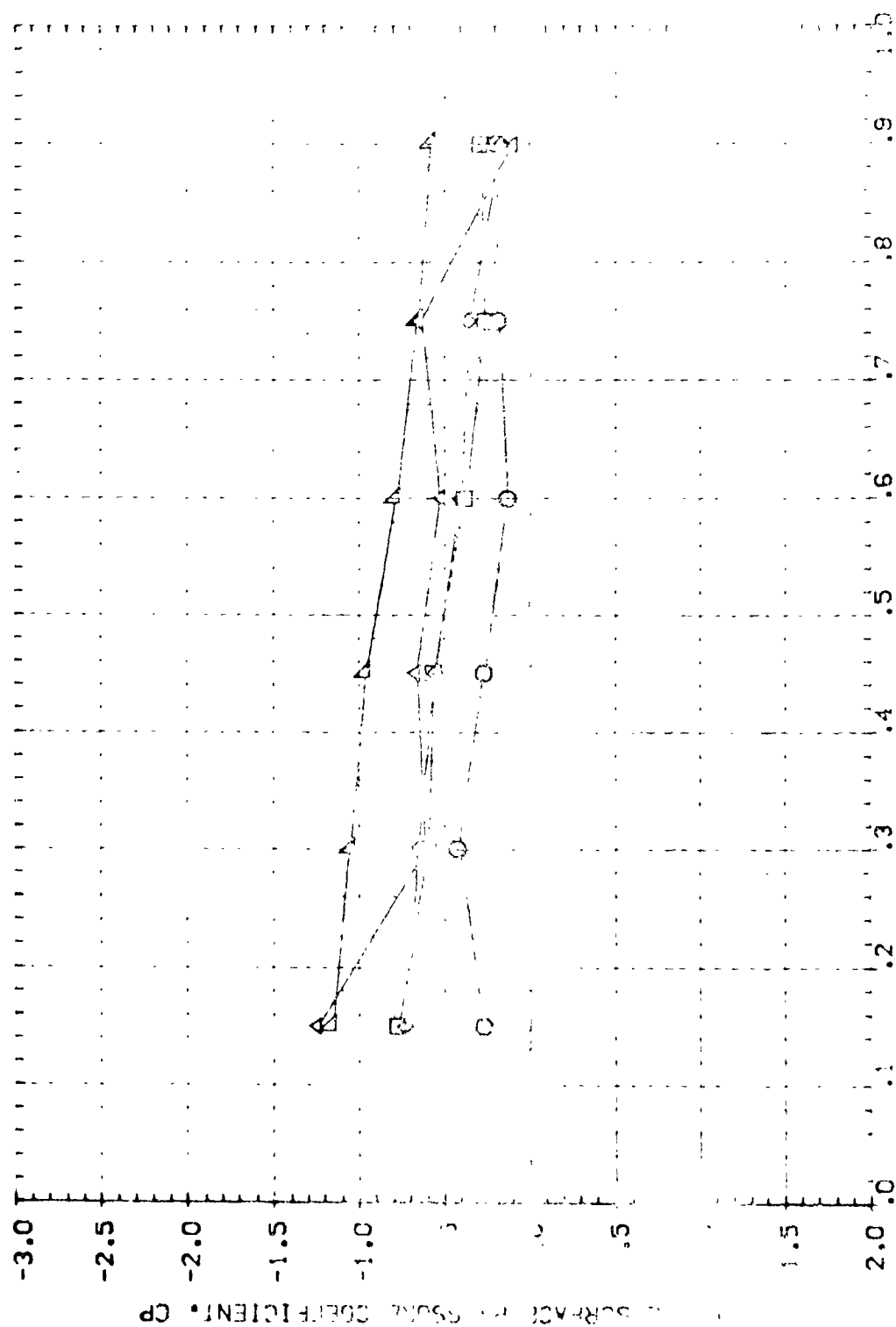


FIG 68 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, 3% MAX LEVON
WING CHORDWISE LOCATION, X/C

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU31)

| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|---------------|--------|------|-------------------|-------|--------|
| | | | | BETA | PTN/P | ELEVON |
| ○ | .000 | 10.010 | .165 | .000 | .000 | 15.000 |
| ◇ | .304 | | | .039 | .039 | |
| △ | .520 | | | | | |
| ▽ | .663 | | | | | |
| ▽ | .873 | | | | | |

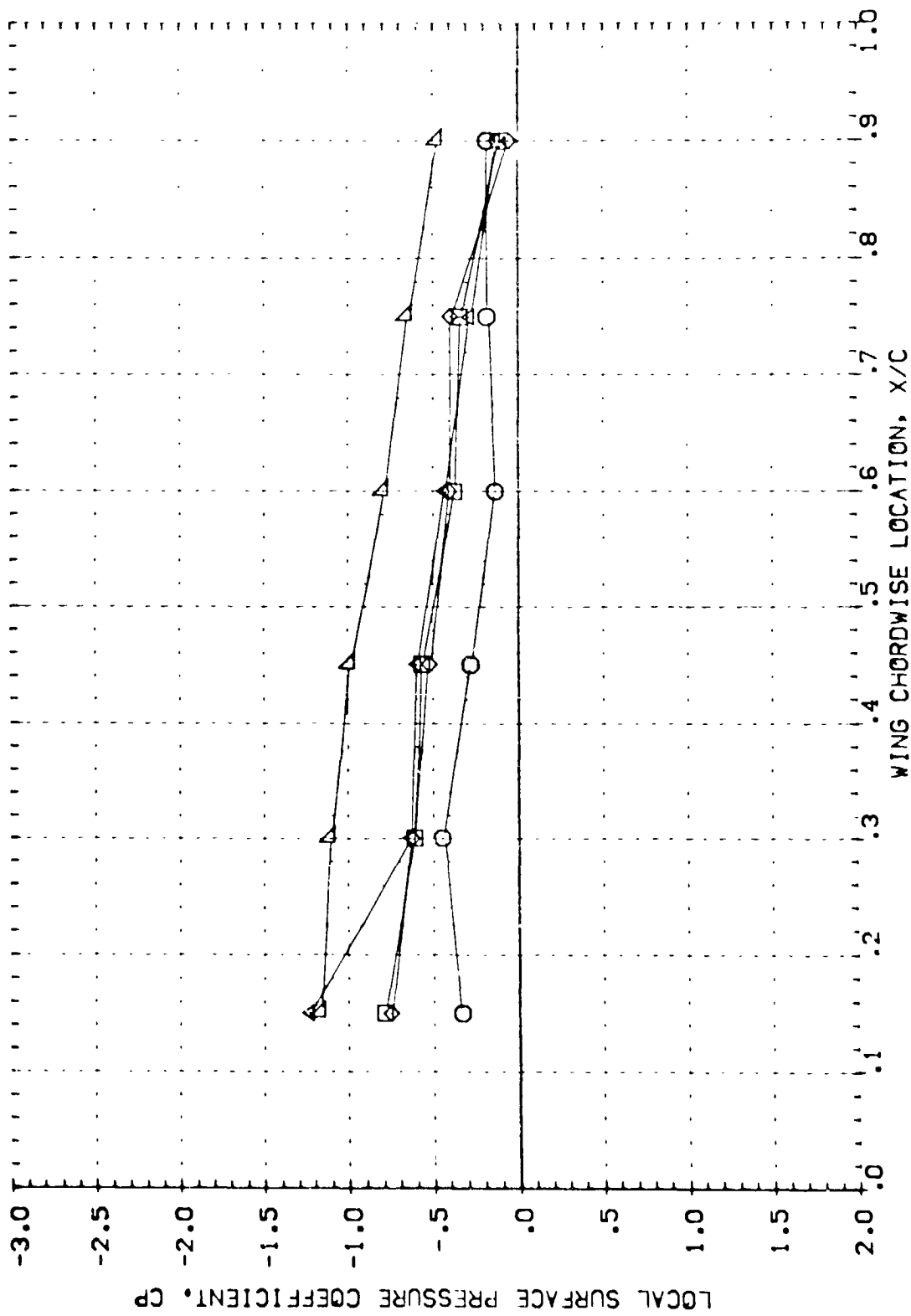


FIG 69 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU28)

| SYMBOL | 21/8 | ALPHA | MACH | BETA | PTN/P | BOFLAP | PTN/P | BOFLAP | PTN/P | BOFLAP |
|--------|------|-------|------|--------|--------|--------|--------|--------|--------|--------|
| ○ | .000 | -.020 | .165 | | .000 | | .000 | | .000 | |
| □ | .304 | | | H/8 | .125 | | .125 | | .125 | |
| ◇ | .520 | | | ELEVON | 15.000 | | 15.000 | | 15.000 | |
| △ | .653 | | | | | | | | | |
| ▽ | .873 | | | | | | | | | |

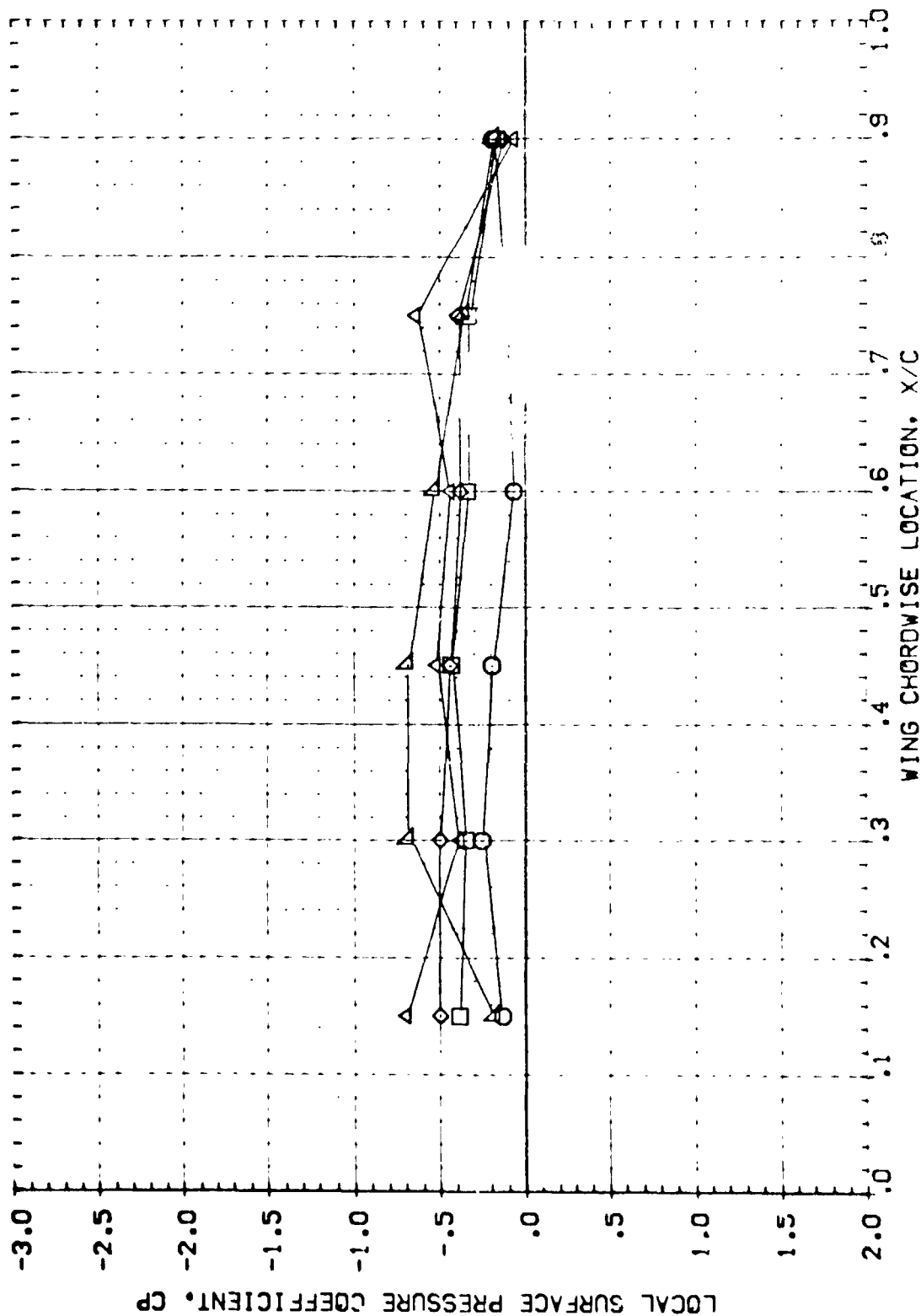


FIG 69 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16CSF1 J40 W87E18 WING UPPER SURFACE (RDVU28)

| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|---------------|-------|------|-------------------|-------|--------|--------|
| | | | | BETA H/B | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | 9.965 | .165 | | .000 | | 15.000 |
| □ | .304 | | | | .125 | | |
| △ | .520 | | | | | | |
| ◇ | .663 | | | | | | |
| ◇ | .873 | | | | | | |

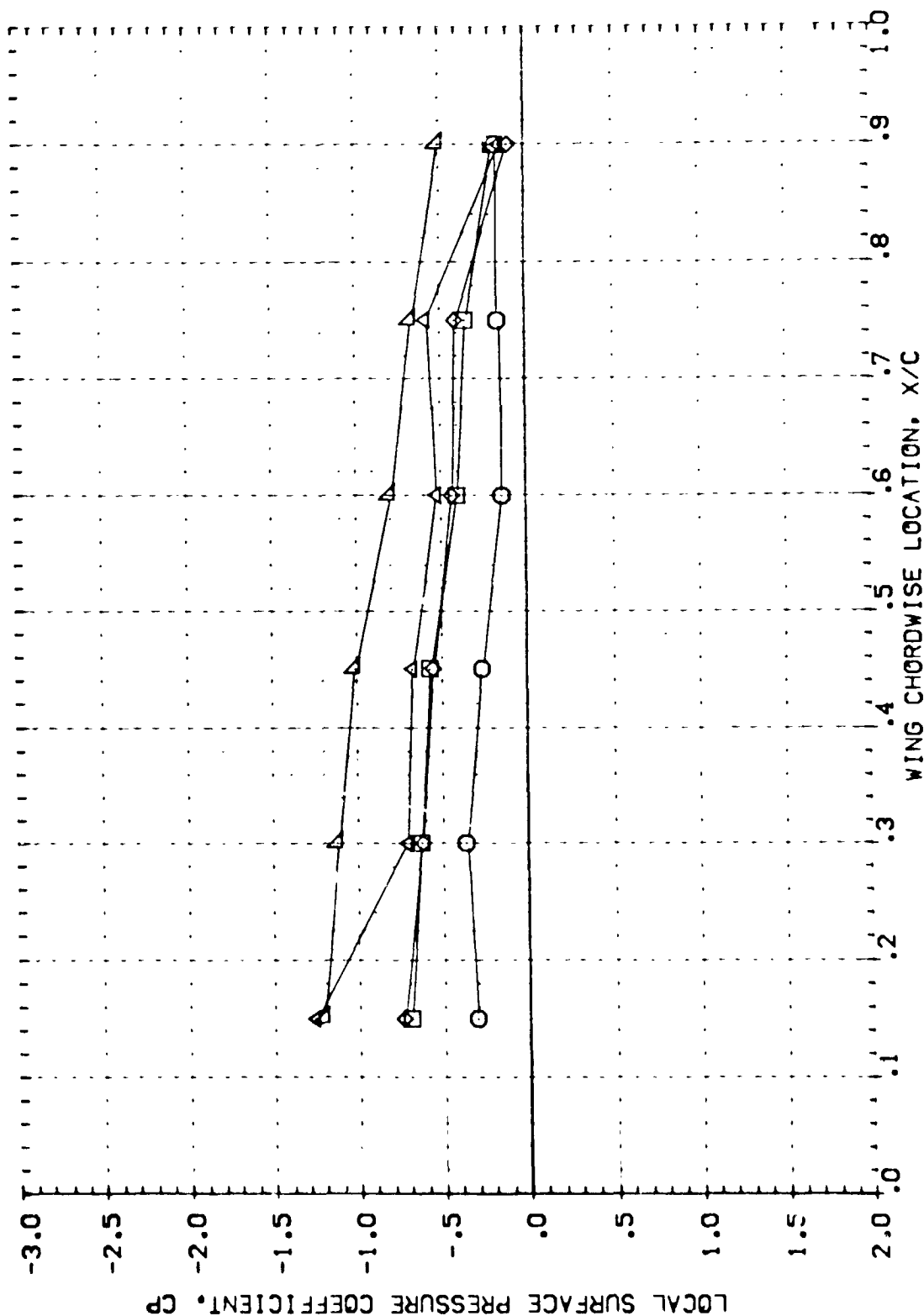


FIG 69 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B 316C5F1 J40 W87E18 WING UPPER SURFACE (RDVU34)

| | | | | | |
|--------|------|-------|------|--------|---------------------|
| SYMBOL | 21/8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | -.010 | .165 | H/8 | .000 PTN/P 1.500 |
| ◇ | .334 | | | ELEVON | .286 BOFLAP -18.000 |
| △ | .570 | | | | |
| □ | .663 | | | | |
| + | .873 | | | | |

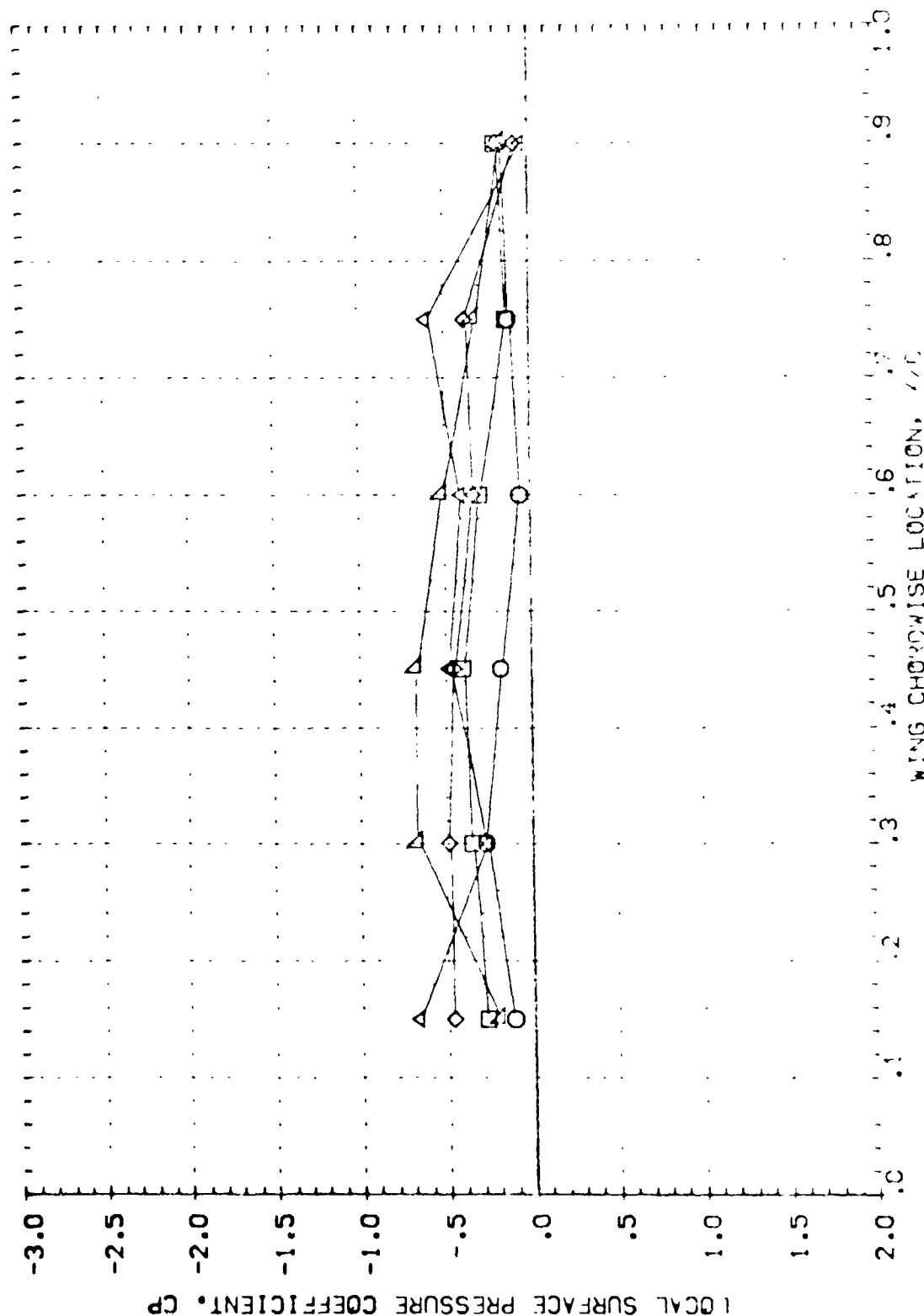


FIG 69 WING UPPER SURFACE PRESSURE COEFFICIENTS DIST ALONG J40, PTN/P=1.5, BOFLAP=18.000

0A57-B B16C5F1 J40 W87E18 WING UPPER SURFACE (RDVU34)

| SYMBOL | 2N/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|--------|---------|--|
| | | | | BETA | PTN/P | 1.500 | |
| ○ | .000 | 9.795 | .165 | H/B | BDFLAP | -10.000 | |
| ◇ | .334 | | | ELEVON | | | |
| △ | .570 | | | | | | |
| □ | .663 | | | | | | |
| × | .873 | | | | | | |

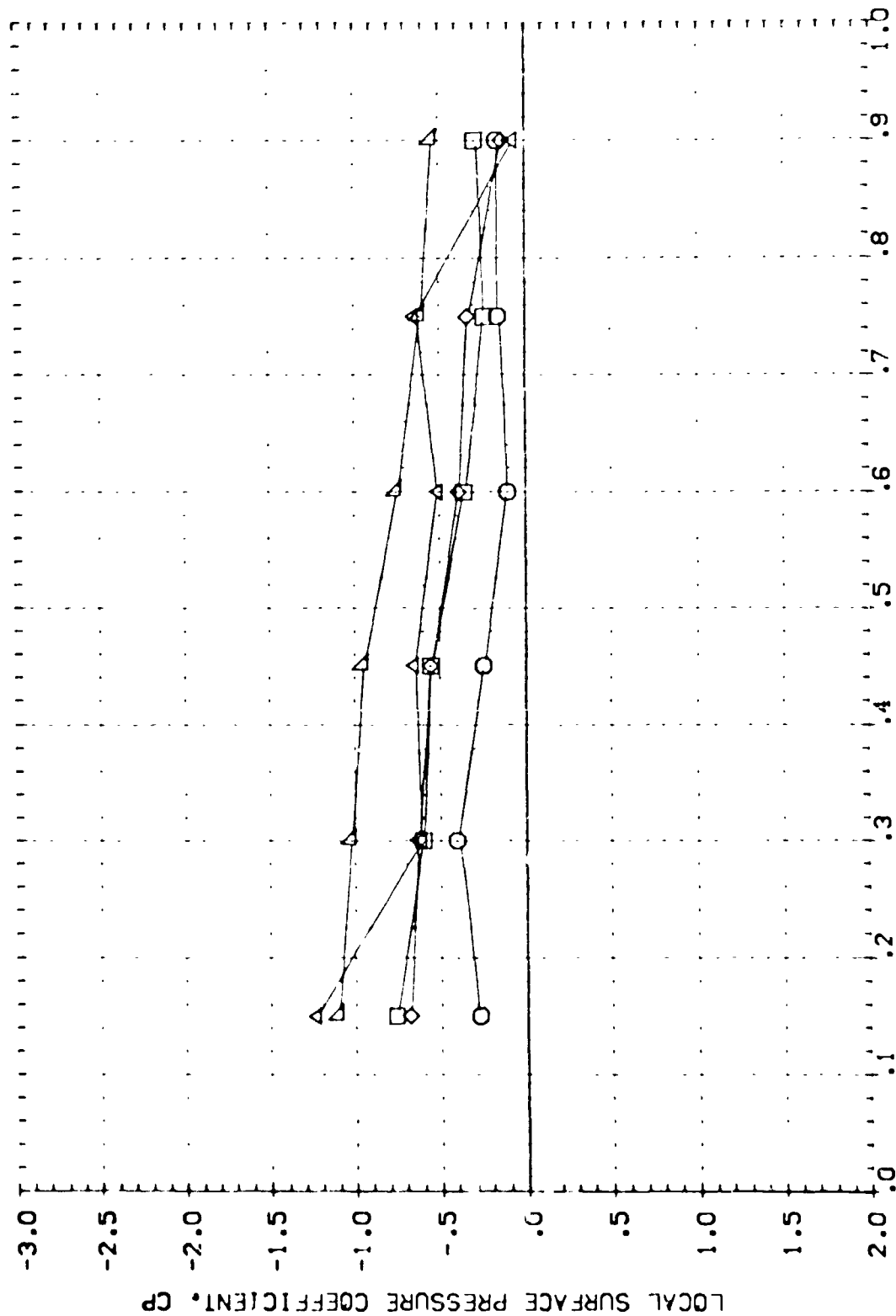


FIG 69 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J41 W87E18 WING UPPER SURFACE (RDVU56)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 M/B .039 BOFLAP -18.000
 ELEVON .000

ALPHA 10.005 MACH .165
 21/8 .000
 .374
 .520
 .663
 .873

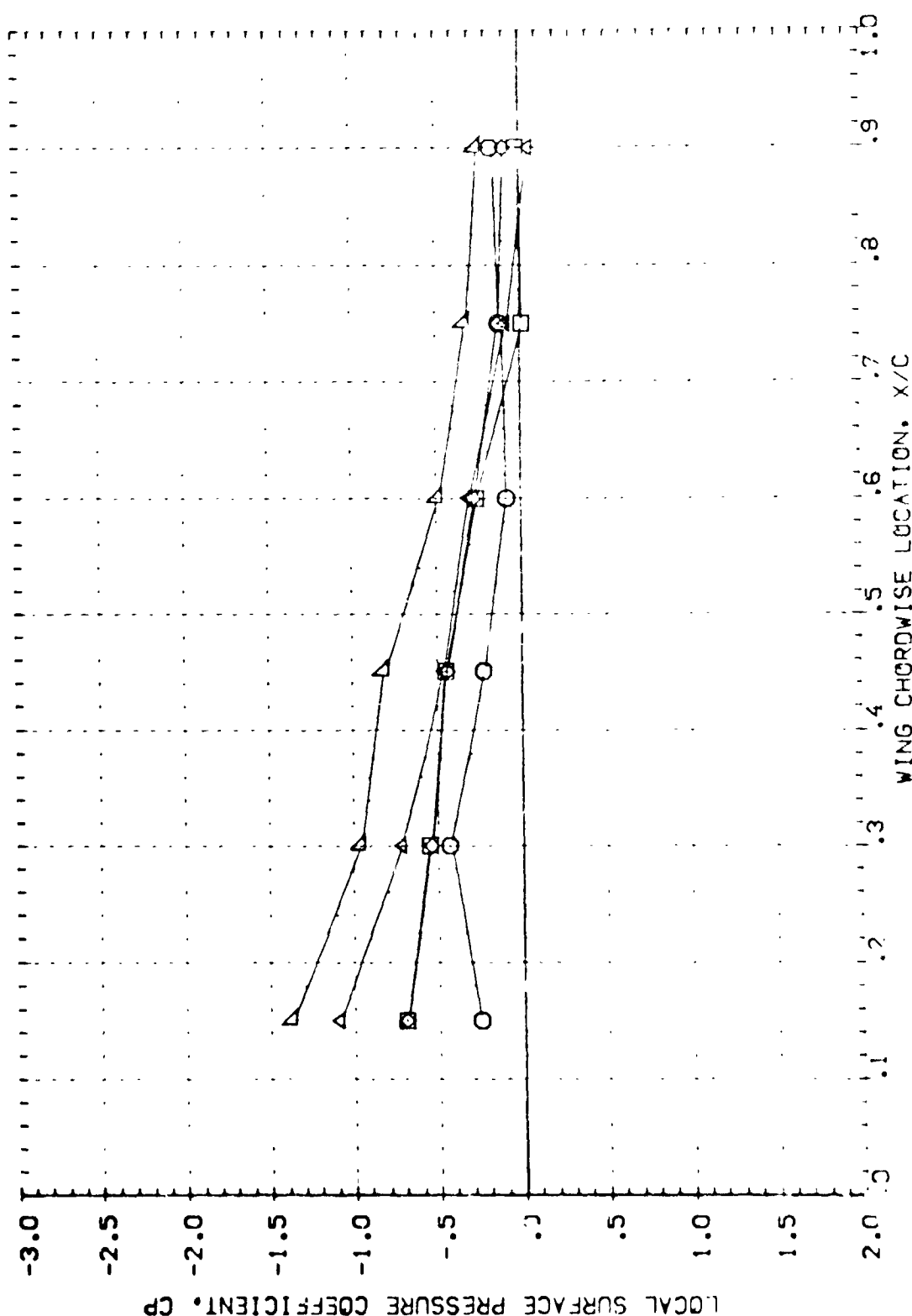


FIG 70 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.0, 0 ELEVON

0157-B B16C5F1 J41 W87E18 WING UPPER SURFACE (RDVU58)

| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|---------------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | BOFLAP |
| ○ | .000 | -.005 | .165 | H/B | .000 | 1.000 |
| ◇ | .304 | | | ELEVON | .125 | -18.000 |
| △ | .500 | | | | .000 | |
| □ | .663 | | | | | |
| ○ | .873 | | | | | |

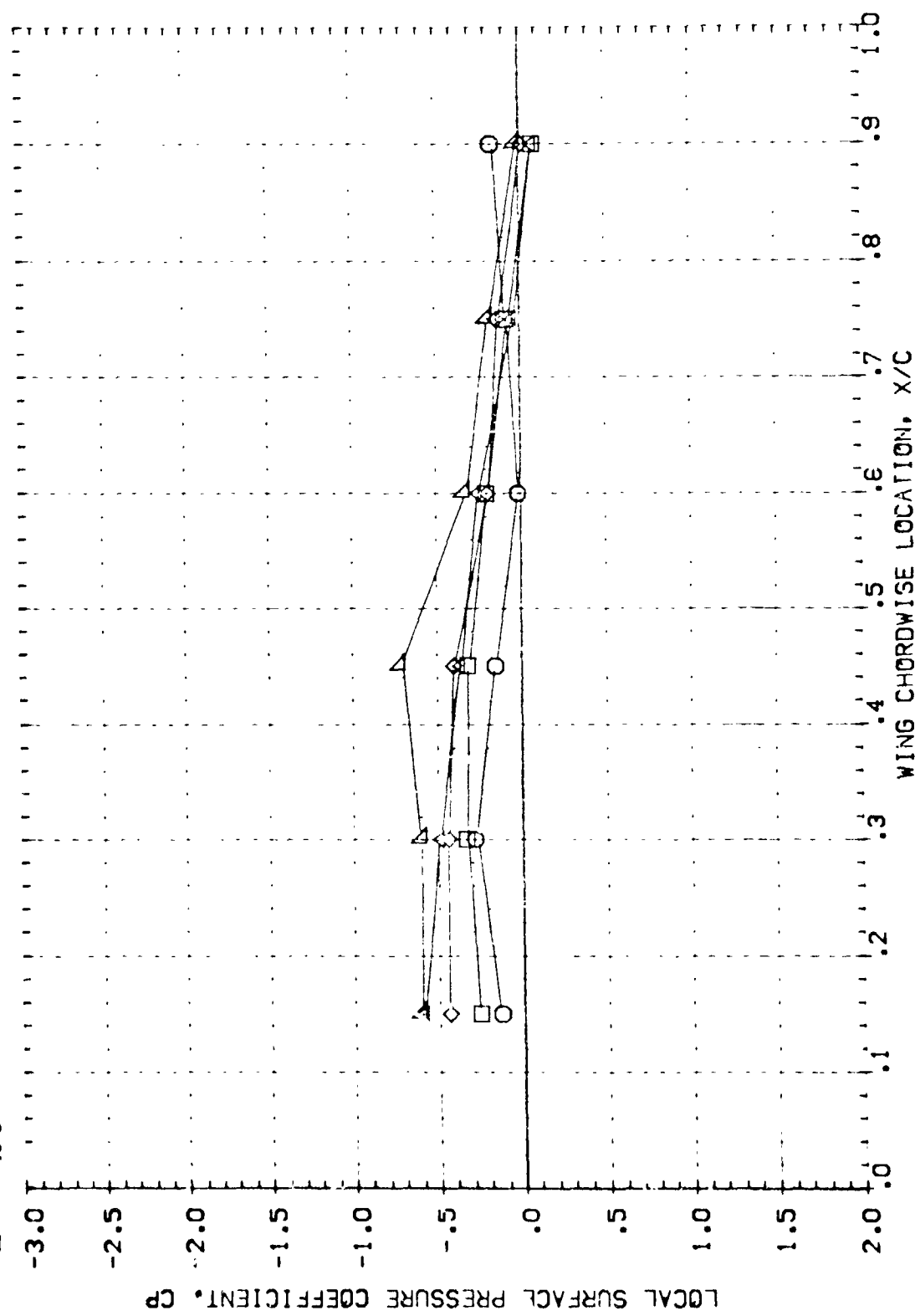


FIG 70 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING UPPER SURFACE (RDVU53)

| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|---------------|-------|------|-------------------|-----------------|-----------------|
| | | | | BETA H/B | PTN/P BDFLAP | PTN/P ELEVON |
| □ | .000 | -.005 | .165 | .000 | 1.000 | 1.000 |
| □ | .334 | | | .286 | | -18.000 |
| ◇ | .520 | | | .000 | | |
| △ | .663 | | | | | |
| ▽ | .873 | | | | | |

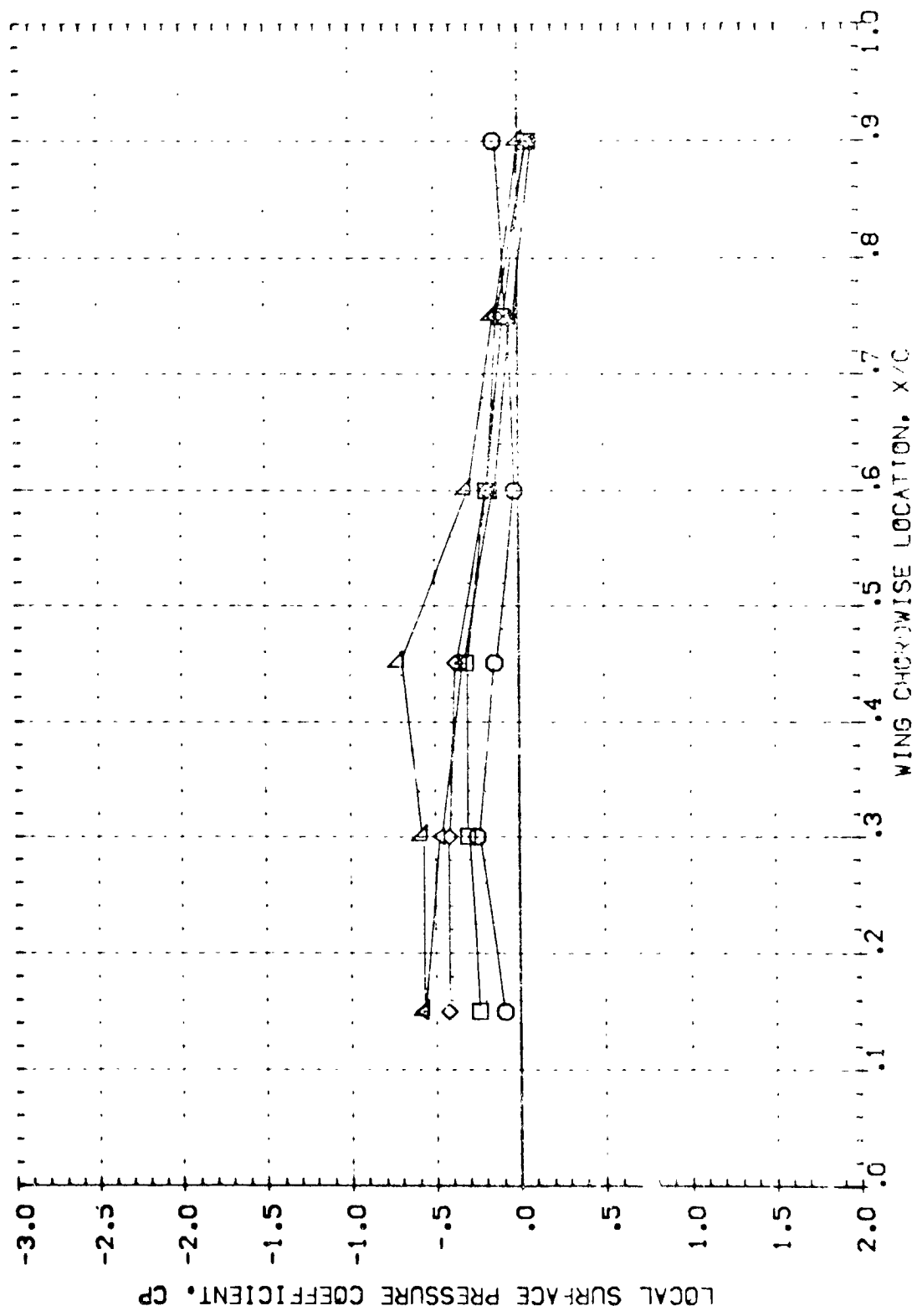


FIG 70 WING UPPER SURFACE PRESSURE COEFFICIENTS WITH J41, PTN/P-1.0, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING UPPER SURFACE (RDVU53)

| STRENGTH | 2X/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|----------|------|-------|------|-------------------|--------|---------|--|
| | | | | BETA | PTN/P | 1,000 | |
| | .000 | 9.980 | .165 | H/B | BOFLAP | -18,000 | |
| | .334 | | | ELEVON | | | |
| | .570 | | | | | | |
| | .663 | | | | | | |
| | .873 | | | | | | |

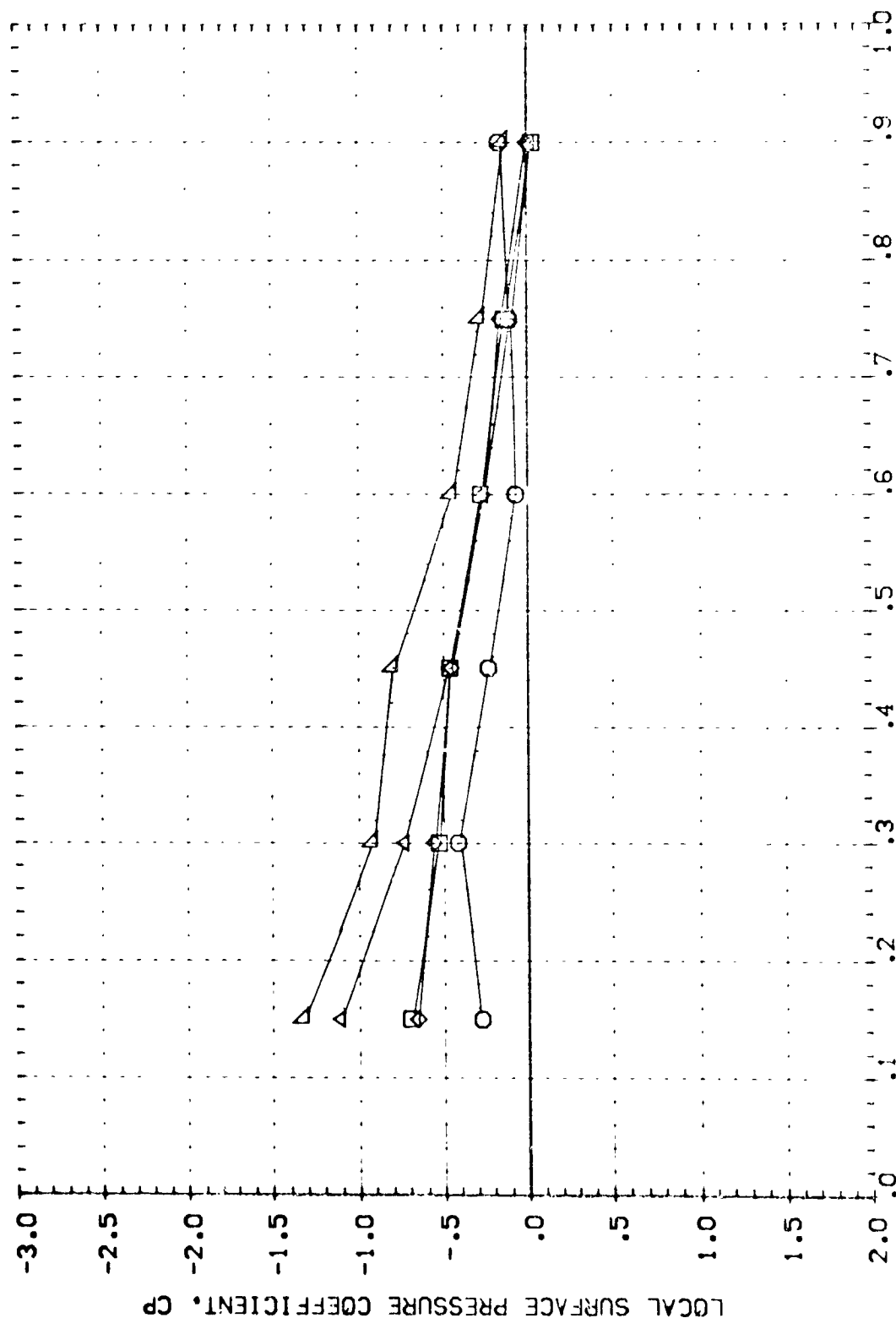
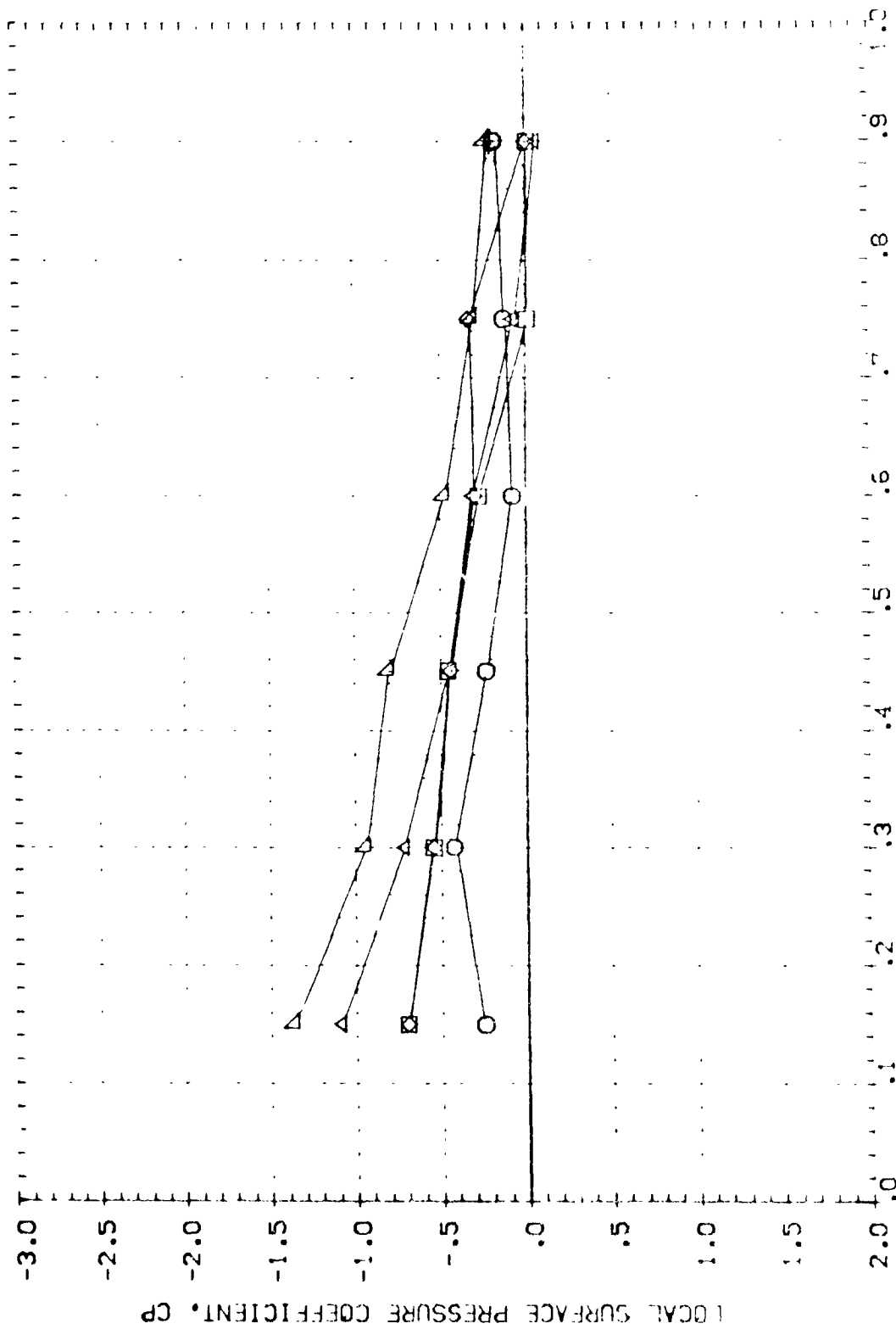


FIG 70 WING UPPER SURFACE PRESSURE COEFFICIENTS DIST WITH J41, PTN/P=1.0, 0 ELEVON

CA57-B B16C5F1 J41 W87E18 WING UPPER SURFACE (RDVU55)

| SYMBOL | Z/Y/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|-------|-------|------|-------------------|--------|---------|
| | | | | BETA | PTN/P | 1,300 |
| ○ | .000 | 9.990 | .165 | M B | BDF/A0 | -18,000 |
| △ | .334 | | | ELEVON | | |
| □ | .520 | | | | | |
| ◇ | .653 | | | | | |
| ○ | .873 | | | | | |



WING CHORDWISE LOCATION, X/C

FIG 71 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J41 W87E18 WING UPPER SURFACE (RDVU57)

| SYMBOL | 2 α /B | ALPHA | M ∞ | PARAMETRIC VALUES | | |
|--------|---------------|-------|------------|-------------------|-----------------|------------------|
| | | | | BETA H/B | PTN/P BOFLAP | 1,300 -18,000 |
| ○ | .000 | -.005 | .165 | .000 | .000 | |
| ◇ | .334 | | | .125 | | |
| △ | .500 | | | .000 | | |
| □ | .663 | | | | | |
| ● | .873 | | | | | |

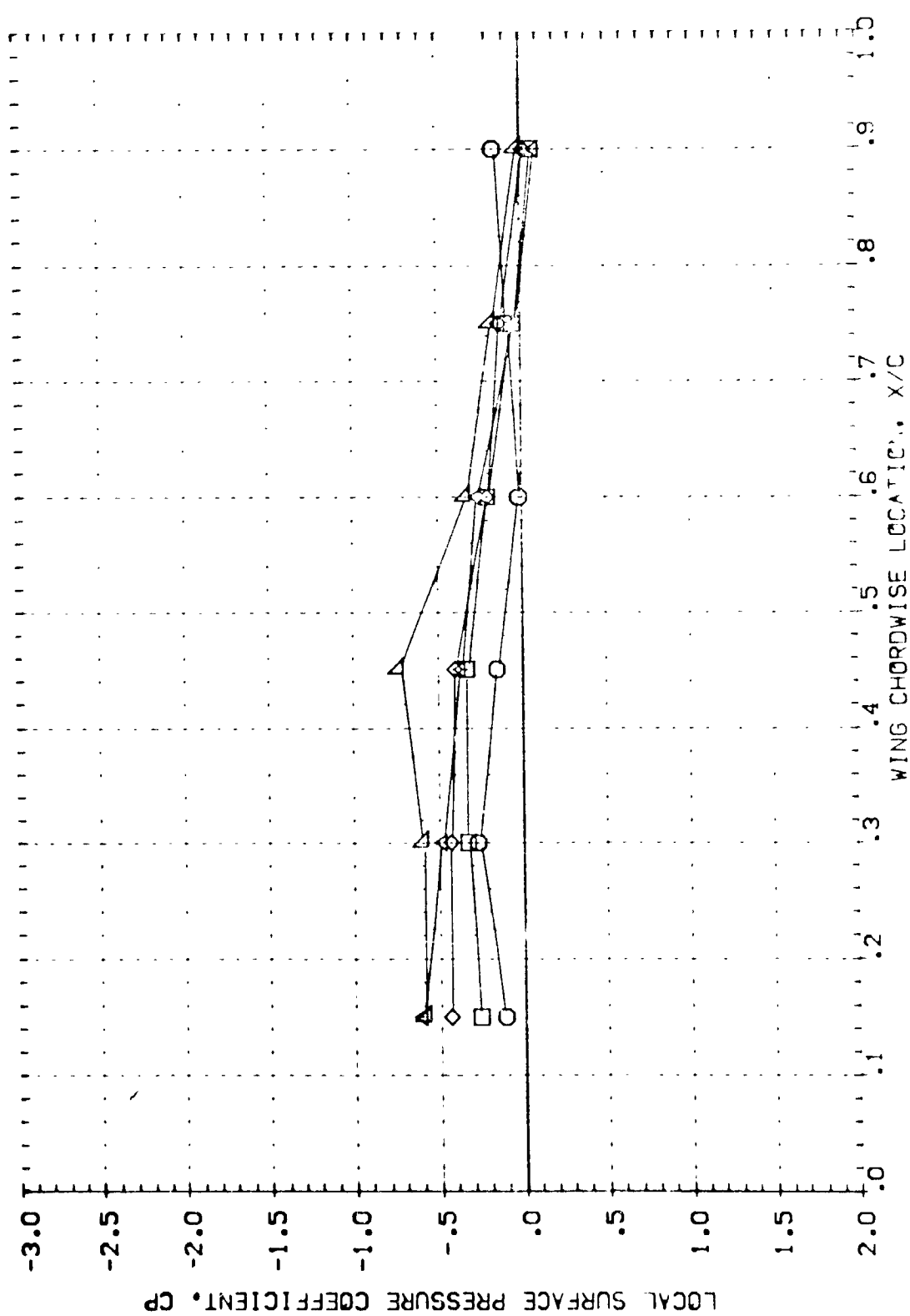


FIG 71 WING UPPER SURFACE PRESSURE COEFFICIENTS WITH $\alpha=1.3$, $\alpha=1.3$, $\alpha=1.3$, $\alpha=1.3$, $\alpha=1.3$

0A57-R B16C5F1 J41 W87E18 WING UPPER SURFACE(RDVU57)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BOFLAP -18.000
 ELEVON .000

SYMBOL 2Y/B ALPHA MACH
 O .000 9.995 .165
 .304
 .520
 .693
 .873

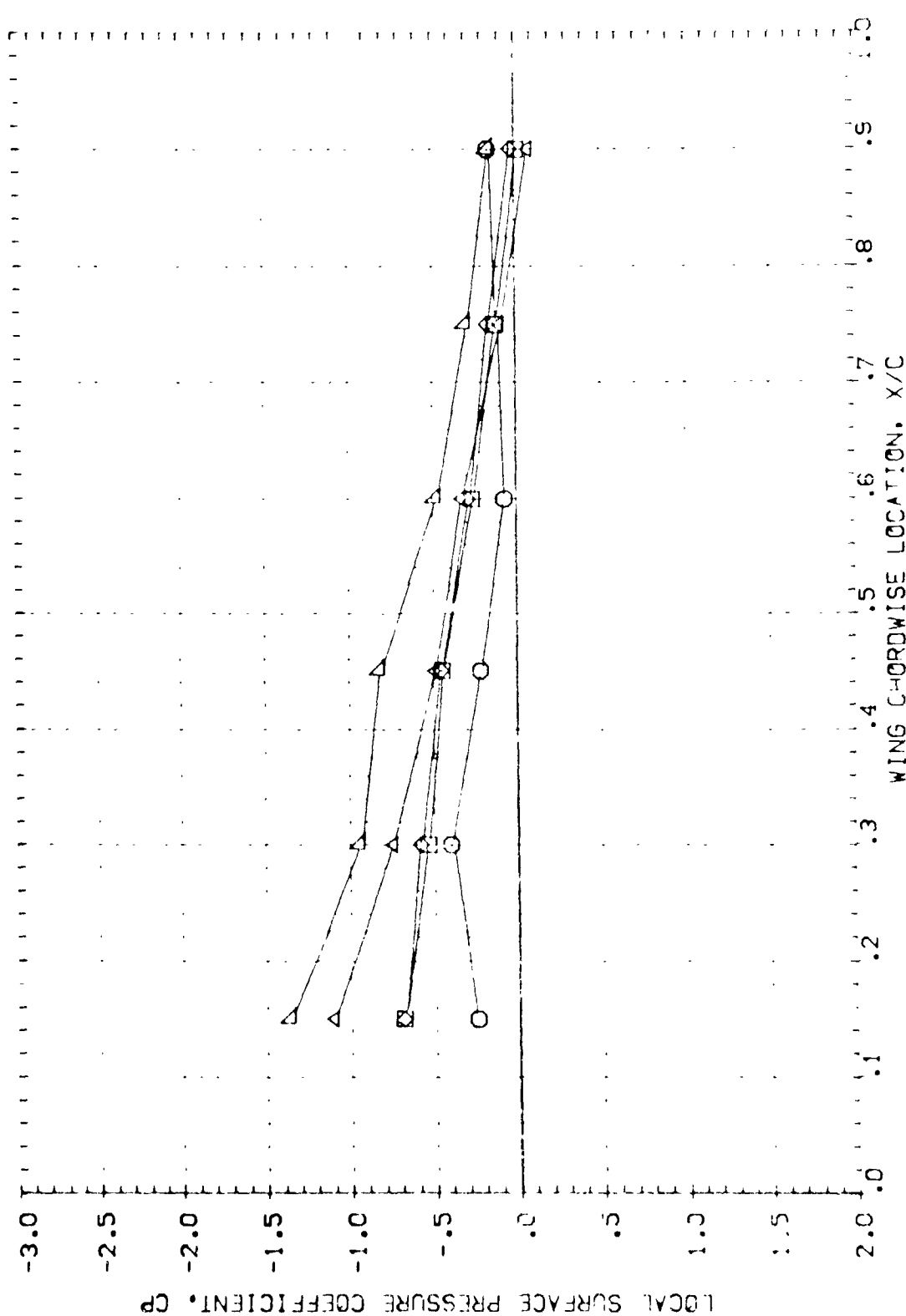
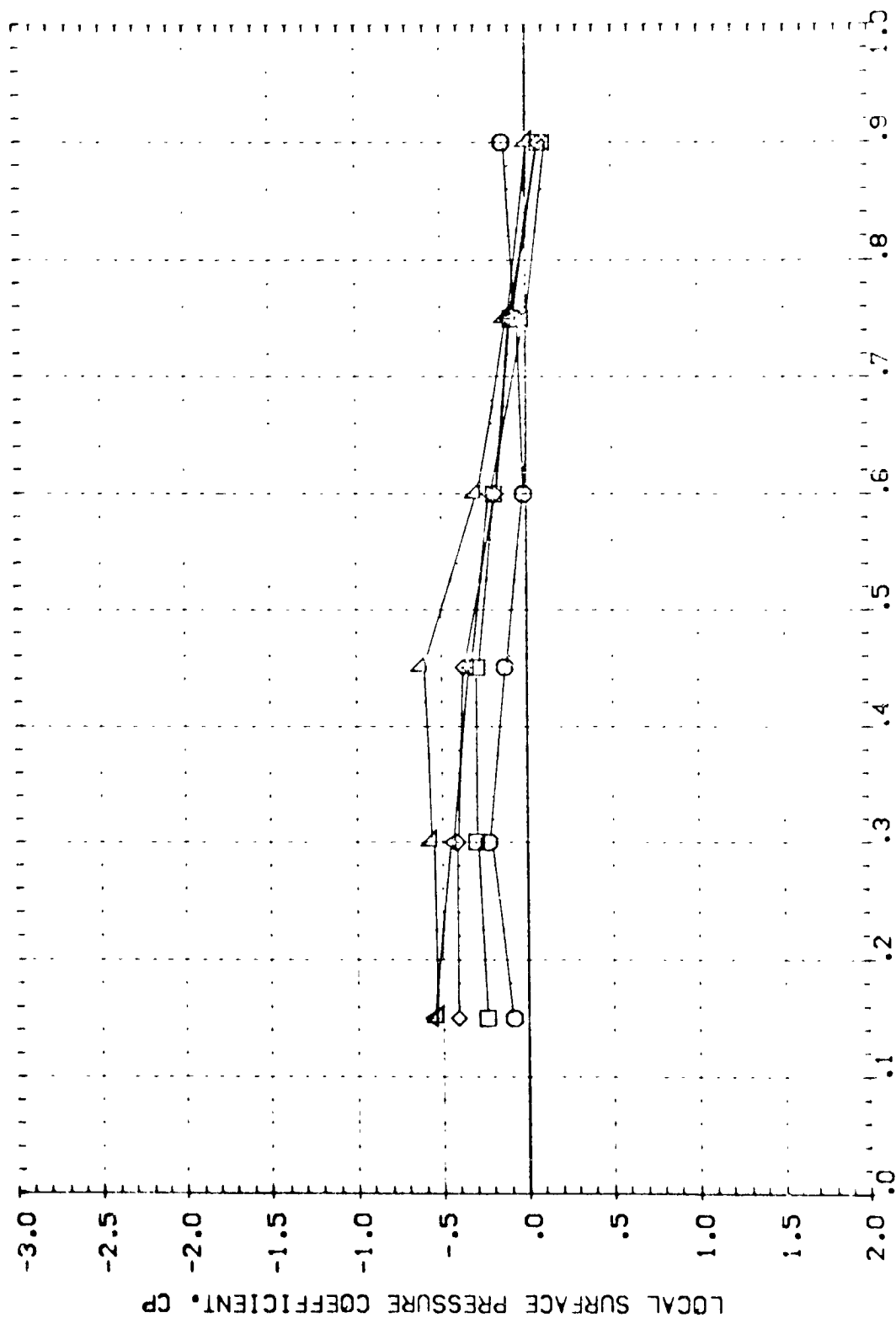


FIG 71 WING UPPER SURFACE PRESSURE CHORDWISE DIS* WITH J41, PTN P=1.3, 0 ELEVON

QAS7-B B16C5F1 J41 W87E18 WING UPPER SURFACE (RDVU52)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | BOFLAP |
| ○ | .000 | -.005 | .165 | H/B | .000 | 1.300 |
| ◇ | .334 | | | ELEVON | .286 | -18.000 |
| □ | .520 | | | | .000 | |
| △ | .653 | | | | | |
| ▽ | .873 | | | | | |



WING CHORDWISE LOCATION, X/C

FIG 71 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0457-B 31605F1 J41 W87E18 WING UPPER SURFACE (ROVU52)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|------------------|
| | | | | BETA H/B | PTN/P | BDFLAP | 1.300 -18.000 |
| 0.000 | .000 | 9.590 | .115 | .000 | .000 | .000 | |
| 0.000 | .304 | | | .265 | | | |
| 0.000 | .520 | | | .000 | | | |
| 0.000 | .663 | | | | | | |
| 0.000 | .873 | | | | | | |

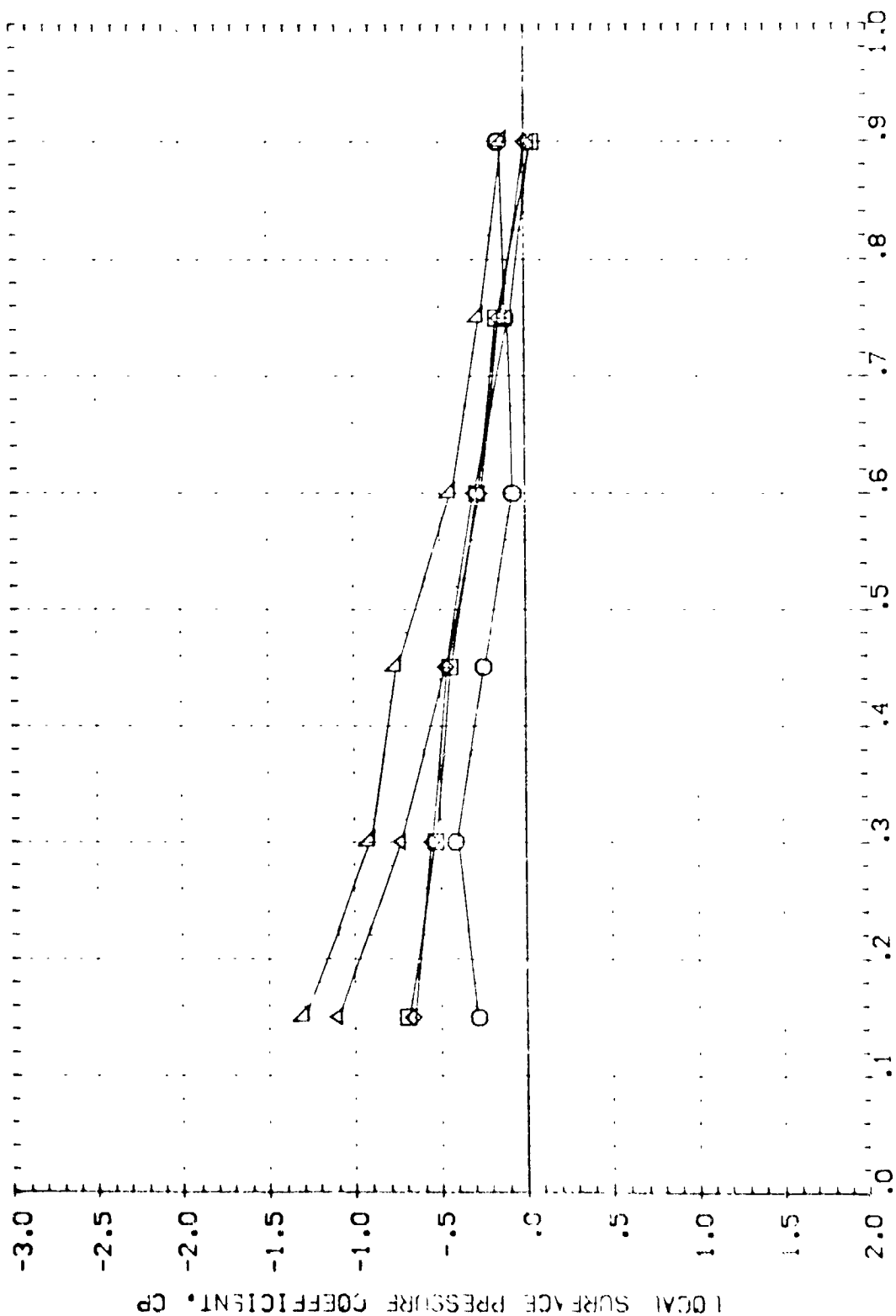


FIG 71 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B 316C5F1 J42 W87E18 WING UPPER SURFACE (RDVU64)

| SYMBOL | 2 γ /8 | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|---------------|--------|------|-------------------|-----------------|------------------|
| | | | | BETA H/8 | PTN/P BOFLAP | 1.000 -18.000 |
| ○ | .000 | 10.000 | .165 | .000 | .000 | |
| △ | .334 | | | | | |
| □ | .520 | | | | | |
| ◇ | .633 | | | | | |
| ◇ | .873 | | | | | |

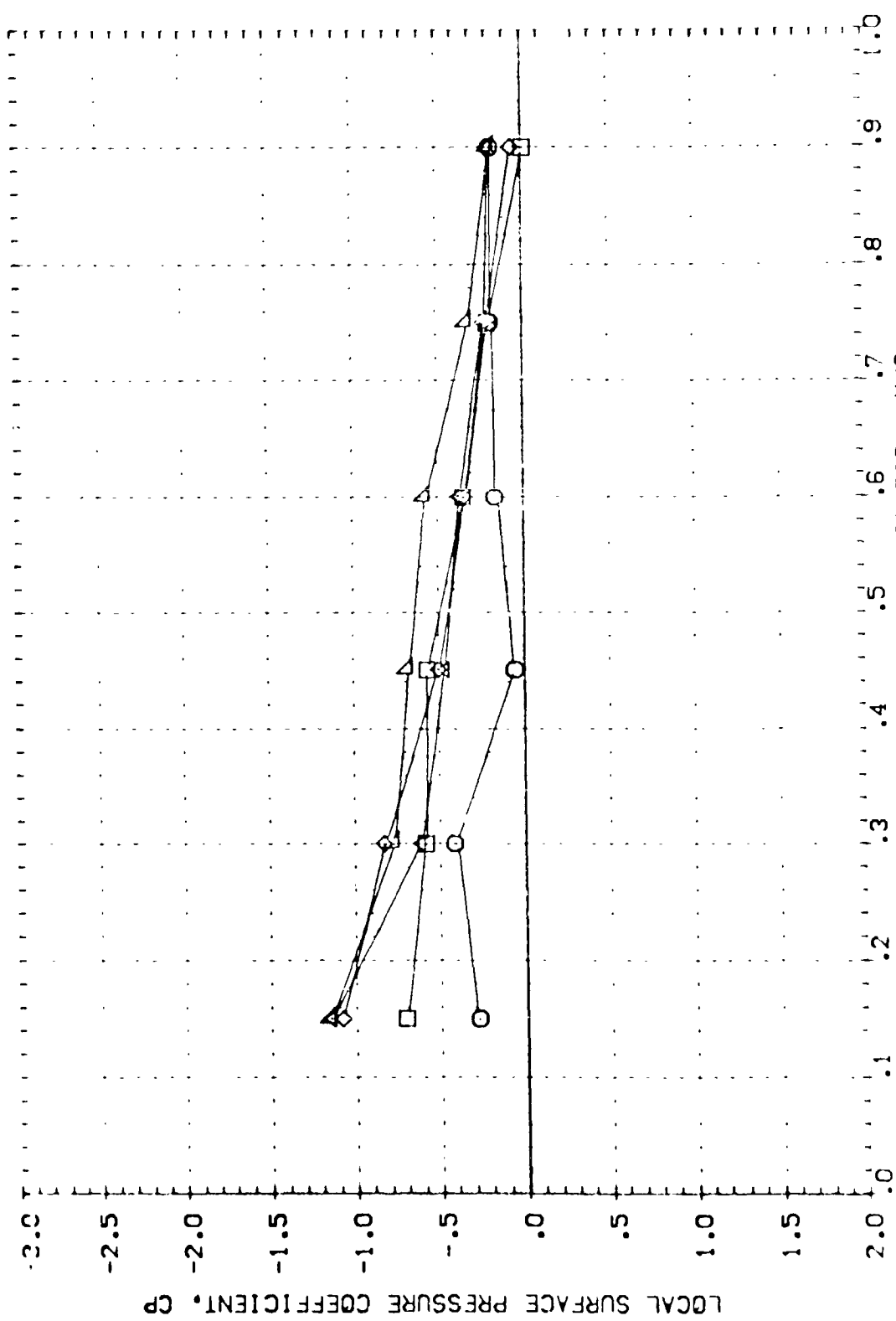
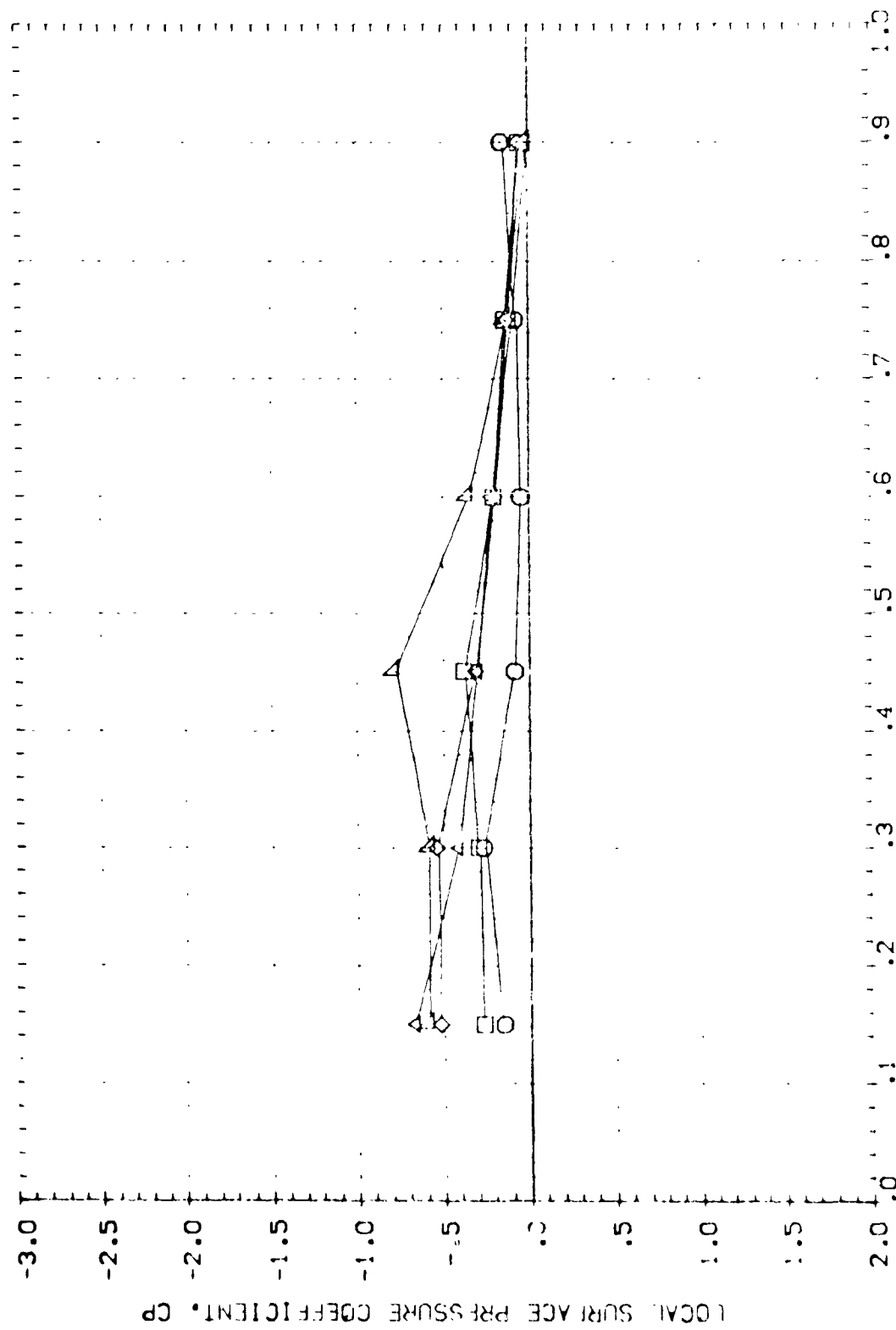


FIG 72 WING UPPER SURFACE PRESSURE COEFFICIENTS WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B 816C5F1 J42 W87E18 WING UPPER SURFACE (RDVU61)

| | | | | | | |
|--------|--------------------------------------|-------|------|-------------------|--------|------------------|
| SYMBOL | 2X/B | ALPHA | MACH | PARAMETRIC VALUES | | |
| | .000 .304 .520 .663 .873 | -.025 | .165 | BETA H/B | PTN/P | 1.000 -18.000 |
| | | | | ELEVON | BDFLAP | .000 |

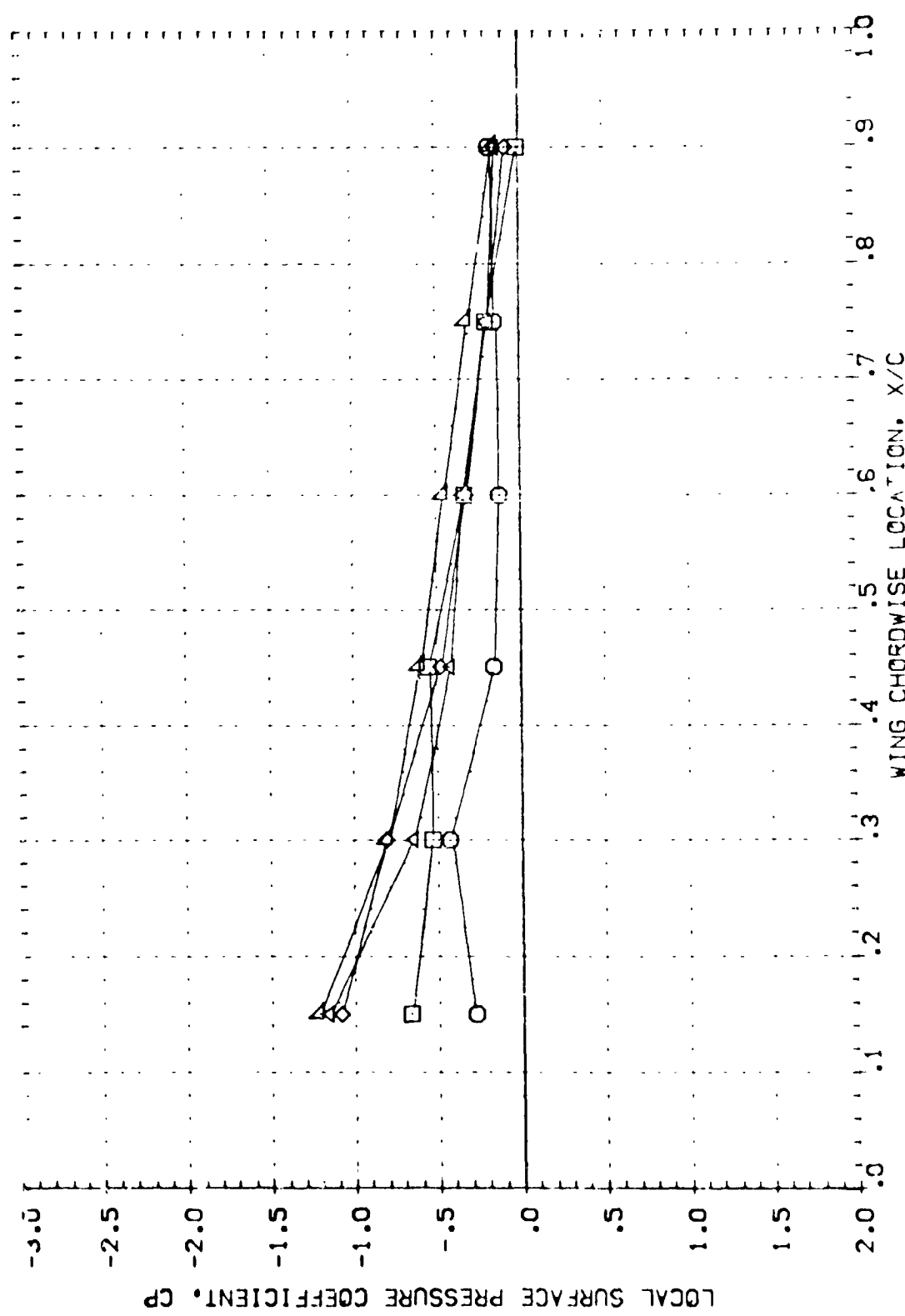


WING CHORDWISE LOCATION, X/C

FIG 72 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.0, 0 ELEVON

CA57-B 816C5F1 J42 W87E18 WING UPPER SURFACE (RDVU61)

| SYMBOL | 2Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | 9.965 | .165 | | .000 | | 1.000 |
| △ | .304 | | | H/B | .125 | | -18.000 |
| □ | .500 | | | ELEVON | .000 | | |
| ◇ | .673 | | | | | | |



WING CHORDWISE LOCATION, X/C

FIG 72 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.0, 0 ELEVON

0457-B B1605F1 J42 W87E18 WING UPPER SURFACE (RDVU70)

PARAMETRIC VALUES
 BETA
 H/B
 ELEVON
 .000
 .205
 .000
 PTA/P
 30° LAP
 1.000
 -0.000

SYMBOL
 0
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100
 101
 102
 103
 104
 105
 106
 107
 108
 109
 110
 111
 112
 113
 114
 115
 116
 117
 118
 119
 120
 121
 122
 123
 124
 125
 126
 127
 128
 129
 130
 131
 132
 133
 134
 135
 136
 137
 138
 139
 140
 141
 142
 143
 144
 145
 146
 147
 148
 149
 150
 151
 152
 153
 154
 155
 156
 157
 158
 159
 160
 161
 162
 163
 164
 165
 166
 167
 168
 169
 170
 171
 172
 173
 174
 175
 176
 177
 178
 179
 180
 181
 182
 183
 184
 185
 186
 187
 188
 189
 190
 191
 192
 193
 194
 195
 196
 197
 198
 199
 200
 201
 202
 203
 204
 205
 206
 207
 208
 209
 210
 211
 212
 213
 214
 215
 216
 217
 218
 219
 220
 221
 222
 223
 224
 225
 226
 227
 228
 229
 230
 231
 232
 233
 234
 235
 236
 237
 238
 239
 240
 241
 242
 243
 244
 245
 246
 247
 248
 249
 250
 251
 252
 253
 254
 255
 256
 257
 258
 259
 260
 261
 262
 263
 264
 265
 266
 267
 268
 269
 270
 271
 272
 273
 274
 275
 276
 277
 278
 279
 280
 281
 282
 283
 284
 285
 286
 287
 288
 289
 290
 291
 292
 293
 294
 295
 296
 297
 298
 299
 300
 301
 302
 303
 304
 305
 306
 307
 308
 309
 310
 311
 312
 313
 314
 315
 316
 317
 318
 319
 320
 321
 322
 323
 324
 325
 326
 327
 328
 329
 330
 331
 332
 333
 334
 335
 336
 337
 338
 339
 340
 341
 342
 343
 344
 345
 346
 347
 348
 349
 350
 351
 352
 353
 354
 355
 356
 357
 358
 359
 360
 361
 362
 363
 364
 365
 366
 367
 368
 369
 370
 371
 372
 373
 374
 375
 376
 377
 378
 379
 380
 381
 382
 383
 384
 385
 386
 387
 388
 389
 390
 391
 392
 393
 394
 395
 396
 397
 398
 399
 400
 401
 402
 403
 404
 405
 406
 407
 408
 409
 410
 411
 412
 413
 414
 415
 416
 417
 418
 419
 420
 421
 422
 423
 424
 425
 426
 427
 428
 429
 430
 431
 432
 433
 434
 435
 436
 437
 438
 439
 440
 441
 442
 443
 444
 445
 446
 447
 448
 449
 450
 451
 452
 453
 454
 455
 456
 457
 458
 459
 460
 461
 462
 463
 464
 465
 466
 467
 468
 469
 470
 471
 472
 473
 474
 475
 476
 477
 478
 479
 480
 481
 482
 483
 484
 485
 486
 487
 488
 489
 490
 491
 492
 493
 494
 495
 496
 497
 498
 499
 500
 501
 502
 503
 504
 505
 506
 507
 508
 509
 510
 511
 512
 513
 514
 515
 516
 517
 518
 519
 520
 521
 522
 523
 524
 525
 526
 527
 528
 529
 530
 531
 532
 533
 534
 535
 536
 537
 538
 539
 540
 541
 542
 543
 544
 545
 546
 547
 548
 549
 550
 551
 552
 553
 554
 555
 556
 557
 558
 559
 560
 561
 562
 563
 564
 565
 566
 567
 568
 569
 570
 571
 572
 573
 574
 575
 576
 577
 578
 579
 580
 581
 582
 583
 584
 585
 586
 587
 588
 589
 590
 591
 592
 593
 594
 595
 596
 597
 598
 599
 600
 601
 602
 603
 604
 605
 606
 607
 608
 609
 610
 611
 612
 613
 614
 615
 616
 617
 618
 619
 620
 621
 622
 623
 624
 625
 626
 627
 628
 629
 630
 631
 632
 633
 634
 635
 636
 637
 638
 639
 640
 641
 642
 643
 644
 645
 646
 647
 648
 649
 650
 651
 652
 653
 654
 655
 656
 657
 658
 659
 660
 661
 662
 663
 664
 665
 666
 667
 668
 669
 670
 671
 672
 673
 674
 675
 676
 677
 678
 679
 680
 681
 682
 683
 684
 685
 686
 687
 688
 689
 690
 691
 692
 693
 694
 695
 696
 697
 698
 699
 700
 701
 702
 703
 704
 705
 706
 707
 708
 709
 710
 711
 712
 713
 714
 715
 716
 717
 718
 719
 720
 721
 722
 723
 724
 725
 726
 727
 728
 729
 730
 731
 732
 733
 734
 735
 736
 737
 738
 739
 740
 741
 742
 743
 744
 745
 746
 747
 748
 749
 750
 751
 752
 753
 754
 755
 756
 757
 758
 759
 760
 761
 762
 763
 764
 765
 766
 767
 768
 769
 770
 771
 772
 773
 774
 775
 776
 777
 778
 779
 780
 781
 782
 783
 784
 785
 786
 787
 788
 789
 790
 791
 792
 793
 794
 795
 796
 797
 798
 799
 800
 801
 802
 803
 804
 805
 806
 807
 808
 809
 810
 811
 812
 813
 814
 815
 816
 817
 818
 819
 820
 821
 822
 823
 824
 825
 826
 827
 828
 829
 830
 831
 832
 833
 834
 835
 836
 837
 838
 839
 840
 841
 842
 843
 844
 845
 846
 847
 848
 849
 850
 851
 852
 853
 854
 855
 856
 857
 858
 859
 860
 861
 862
 863
 864
 865
 866
 867
 868
 869
 870
 871
 872
 873
 874
 875
 876
 877
 878
 879
 880
 881
 882
 883
 884
 885
 886
 887
 888
 889
 890
 891
 892
 893
 894
 895
 896
 897
 898
 899
 900
 901
 902
 903
 904
 905
 906
 907
 908
 909
 910
 911
 912
 913
 914
 915
 916
 917
 918
 919
 920
 921
 922
 923
 924
 925
 926
 927
 928
 929
 930
 931
 932
 933
 934
 935
 936
 937
 938
 939
 940
 941
 942
 943
 944
 945
 946
 947
 948
 949
 950
 951
 952
 953
 954
 955
 956
 957
 958
 959
 960
 961
 962
 963
 964
 965
 966
 967
 968
 969
 970
 971
 972
 973
 974
 975
 976
 977
 978
 979
 980
 981
 982
 983
 984
 985
 986
 987
 988
 989
 990
 991
 992
 993
 994
 995
 996
 997
 998
 999
 1000
 1001
 1002
 1003
 1004
 1005
 1006
 1007
 1008
 1009
 1010
 1011
 1012
 1013
 1014
 1015
 1016
 1017
 1018
 1019
 1020
 1021
 1022
 1023
 1024
 1025
 1026
 1027
 1028
 1029
 1030
 1031
 1032
 1033
 1034
 1035
 1036
 1037
 1038
 1039
 1040
 1041
 1042
 1043
 1044
 1045
 1046
 1047
 1048
 1049
 1050
 1051
 1052
 1053
 1054
 1055
 1056
 1057
 1058
 1059
 1060
 1061
 1062
 1063
 1064
 1065
 1066
 1067
 1068
 1069
 1070
 1071
 1072
 1073
 1074
 1075
 1076
 1077
 1078
 1079
 1080
 1081
 1082
 1083
 1084
 1085
 1086
 1087
 1088
 1089
 1090
 1091
 1092
 1093
 1094
 1095
 1096
 1097
 1098
 1099
 1100
 1101
 1102
 1103
 1104
 1105
 1106
 1107
 1108
 1109
 1110
 1111
 1112
 1113
 1114
 1115
 1116
 1117
 1118
 1119
 1120
 1121
 1122
 1123
 1124
 1125
 1126
 1127
 1128
 1129
 1130
 1131
 1132
 1133
 1134
 1135
 1136
 1137
 1138
 1139
 1140
 1141
 1142
 1143
 1144
 1145
 1146
 1147
 1148
 1149
 1150
 1151
 1152
 1153
 1154
 1155
 1156
 1157
 1158
 1159
 1160
 1161
 1162
 1163
 1164
 1165
 1166
 1167
 1168
 1169
 1170
 1171
 1172
 1173
 1174
 1175
 1176
 1177
 1178
 1179
 1180
 1181
 1182
 1183
 1184
 1185
 1186
 1187
 1188
 1189
 1190
 1191
 1192
 1193
 1194
 1195
 1196
 1197
 1198
 1199
 1200
 1201
 1202
 1203
 1204
 1205
 1206
 1207
 1208
 1209
 1210
 1211
 1212
 1213
 1214
 1215
 1216
 1217
 1218
 1219
 1220
 1221
 1222
 1223
 1224
 1225
 1226
 1227
 1228
 1229
 1230
 1231
 1232
 1233
 1234
 1235
 1236
 1237
 1238
 1239
 1240
 1241
 1242
 1243
 1244
 1245
 1246
 1247
 1248
 1249
 1250
 1251
 1252
 1253
 1254
 1255
 1256
 1257
 1258
 1259
 1260
 1261
 1262
 1263
 1264
 1265
 1266
 1267
 1268
 1269
 1270
 1271
 1272
 1273
 1274
 1275
 1276
 1277
 1278
 1279
 1280
 1281
 1282
 1283
 1284
 1285
 1286
 1287
 1288
 1289
 1290
 1291
 1292
 1293
 1294
 1295
 1296
 1297
 1298
 1299
 1300
 1301
 1302
 1303
 1304
 1305
 1306
 1307
 1308
 1309
 1310
 1311
 1312
 1313
 1314
 1315
 1316
 1317
 1318
 1319
 1320
 1321
 1322
 1323
 1324
 1325
 1326
 1327
 1328
 1329
 1330
 1331
 1332
 1333
 1334
 1335
 1336
 1337
 1338
 1339
 1340
 1341
 1342
 1343
 1344
 1345
 1346
 1347
 1348
 1349
 1350
 1351
 1352
 1353
 1354
 1355
 1356
 1357
 1358
 1359
 1360
 1361
 1362
 1363
 1364
 1365
 1366
 1367
 1368
 1369
 1370
 1371
 1372
 1373
 1374
 1375
 1376
 1377
 1378
 1379
 1380
 1381
 1382
 1383
 1384
 1385
 1386
 1387
 1388
 1389
 1390
 1391
 1392
 1393
 1394
 1395
 1396
 1397
 1398
 1399
 1400
 1401
 1402
 1403
 1404
 1405
 1406
 1407
 1408
 1409
 1410
 1411
 1412
 1413
 1414
 1415
 1416
 1417
 1418
 1419
 1420
 1421
 1422
 1423
 1424
 1425
 1426
 1427
 1428
 1429
 1430
 1431
 1432
 1433
 1434
 1435
 1436
 1437
 1438
 1439
 1440
 1441
 1442
 1443
 1444
 1445
 1446
 1447
 1448
 1449
 1450
 1451
 1452
 1453
 1454
 1455
 1456
 1457
 1458
 1459
 1460
 1461
 1462
 1463
 1464
 1465
 1466
 1467
 1468
 1469
 1470
 1471
 1472
 1473
 1

0457-B 31605F1 J42 W87E18 WING UPPER SURFACE (RDVU70)

| | | | | | | |
|--------|------|-------|------|-------------------|--------|---------|
| SYMBOL | 27/B | A/P | MACH | PARAMETRIC VALUES | | |
| ○ | .000 | 9.960 | .165 | BETA | PTN/P | 1.000 |
| △ | .334 | | | M/B | BD/LAP | -18.000 |
| □ | .520 | | | ELEVON | | |
| ◇ | .663 | | | | | |
| × | .873 | | | | | |

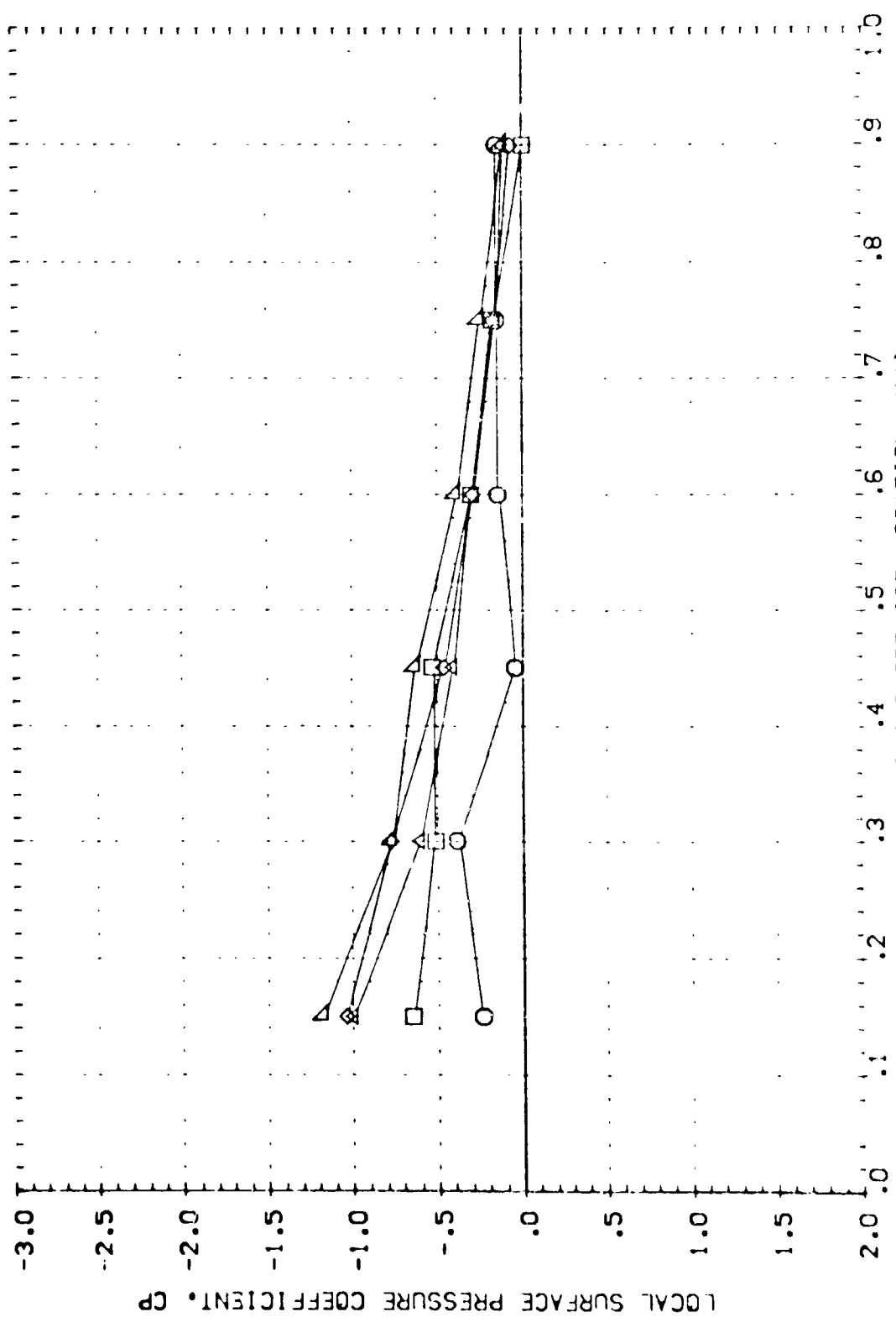


FIG 72 WING UPPER SURFACE PRESSURE COEFFICIENTS WITH J42, PTN/P=1.0, 0 ELEVON
PAGE 303

0457-B BUCOR- J42 W87E18 WING UPPER SURFACE (RDJ063)

| SYMBOL | 27/8 | ALPHA | ALPHA | PARAMETRIC VALUES | | |
|--------|-------|-------|-------|-------------------|-------|-------|
| | | | | BETA | ALPHA | ALPHA |
| 0.000 | 9.995 | .165 | | .000 | .000 | .000 |
| .001 | | | | .039 | .039 | .039 |
| .002 | | | | .078 | .078 | .078 |
| .003 | | | | .117 | .117 | .117 |
| .004 | | | | .156 | .156 | .156 |

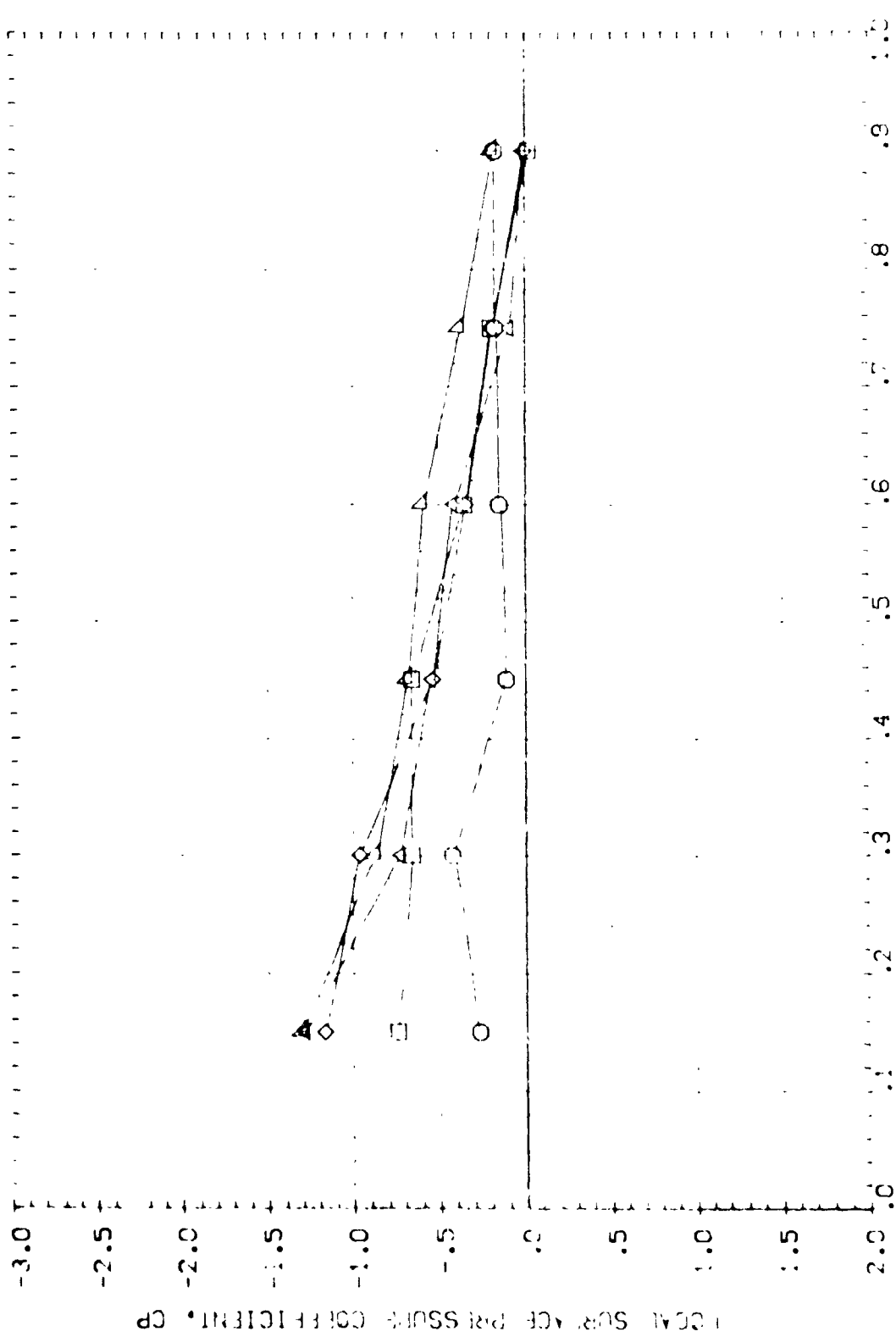


FIG 73 WING UPPER SURFACE PRESSURE COEFFICIENTS WITH $\alpha = 0.000, 0.039, 0.078, 0.156$

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU60)

| SYMBOL | Z/Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|-------|-------|------|-------------------|-------|--------|--------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | -.010 | .165 | H/B | .000 | .125 | .000 |
| □ | .334 | | | | | | |
| ◇ | .520 | | | | | | |
| △ | .663 | | | | | | |
| ▽ | .873 | | | | | | |

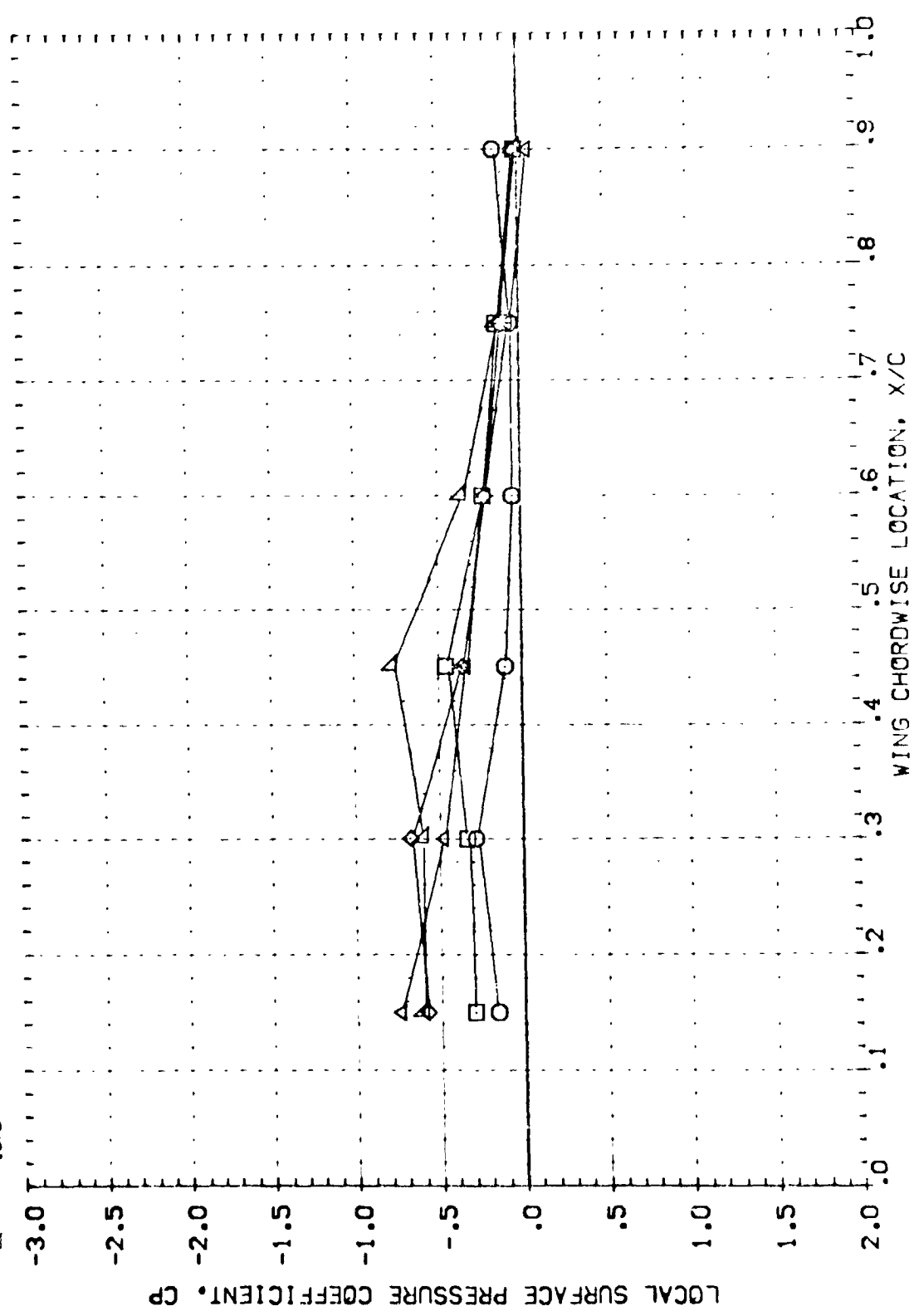


FIG 73 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B15C5F1 J42 W87E18 WING UPPER SURFACE (RDVU60)

PARAMETRIC VALUES
 BETA PTN/P 1.300
 W/B BOFLAP -18.000
 ELEVON .000

SYMBOL 2Y/B ALPHA MACH
 O .000 9.960 .165
 X .304
 Δ .520
 □ .663
 ◇ .873

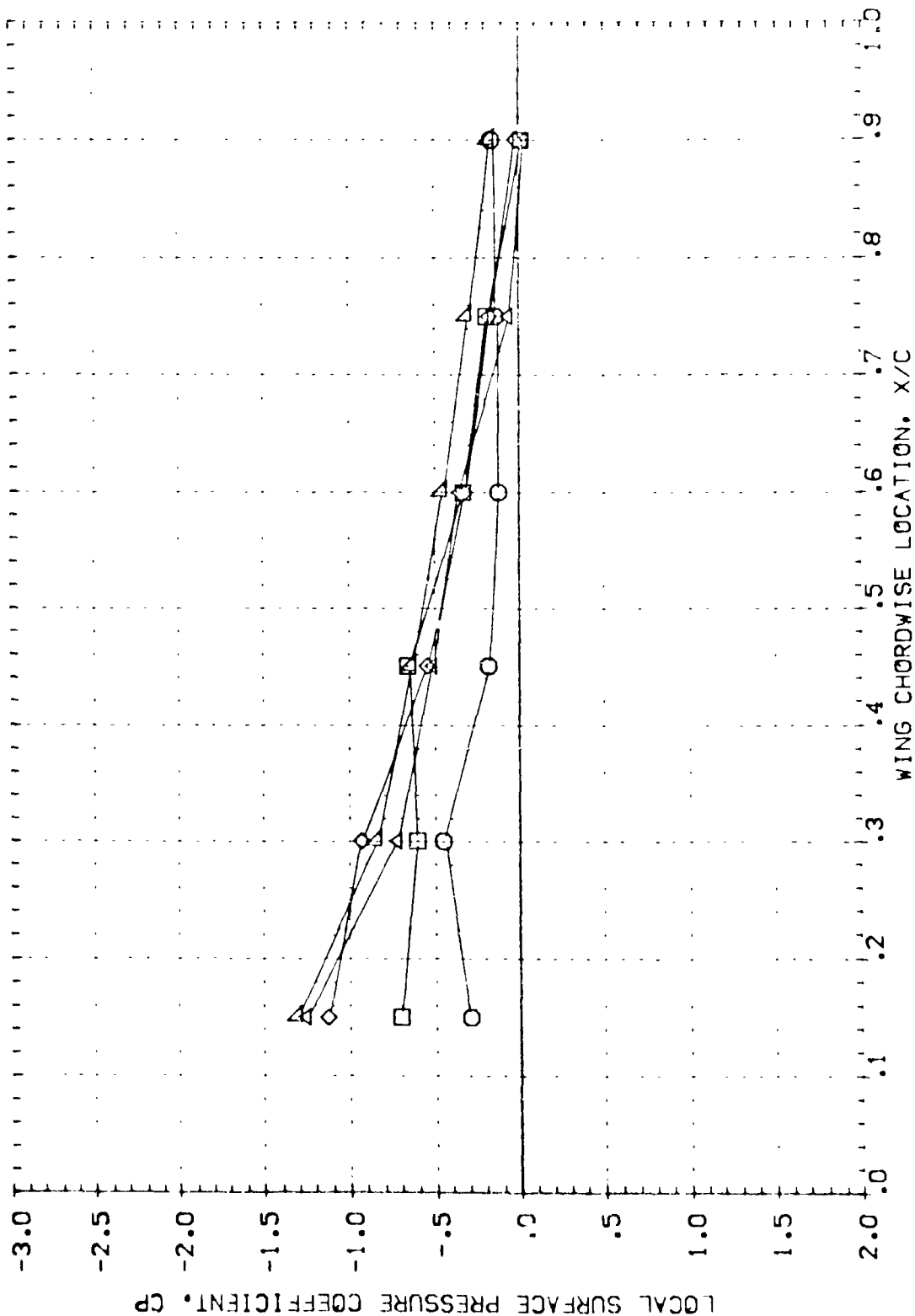


FIG 73 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

| | | | | | | |
|--------|------|-------|------|-------------------|--------|---------|
| SYMBOL | ZI/B | ALPHA | MACH | PARAMETRIC VALUES | | |
| ○ | .000 | .005 | .165 | BETA | PTN/P | 1.300 |
| □ | .304 | | | H/B | BOFLAP | -18.000 |
| ◇ | .520 | | | ELEVON | | |
| △ | .663 | | | | | |
| ▽ | .873 | | | | | |

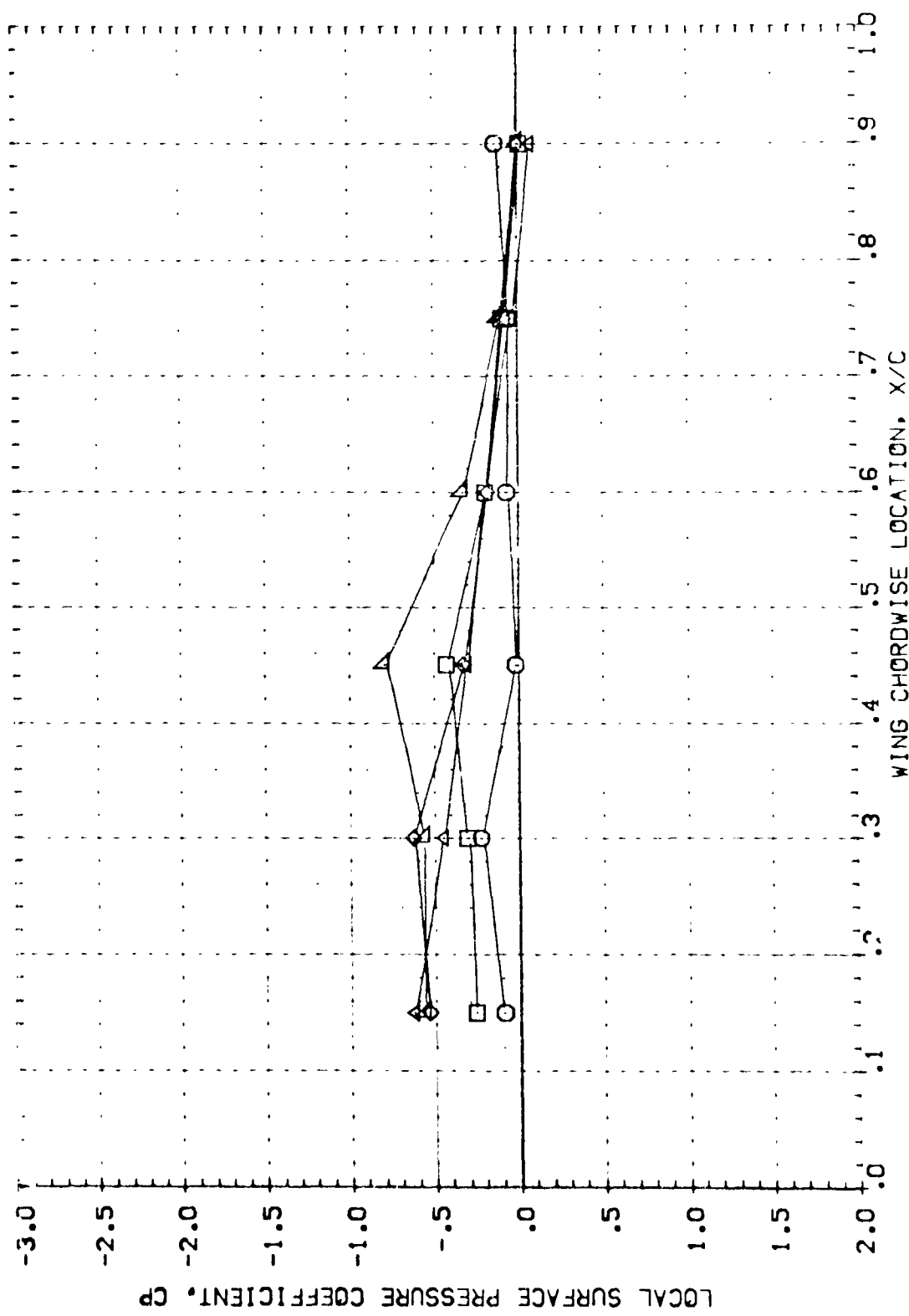


FIG 73 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU69)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .205 BD LAP -18.000
 ELEVON .000

SYMBOL 21/B ALPHA MACH
 O .000 10.010 .165
 X .334
 + .520
 * .663
 .873

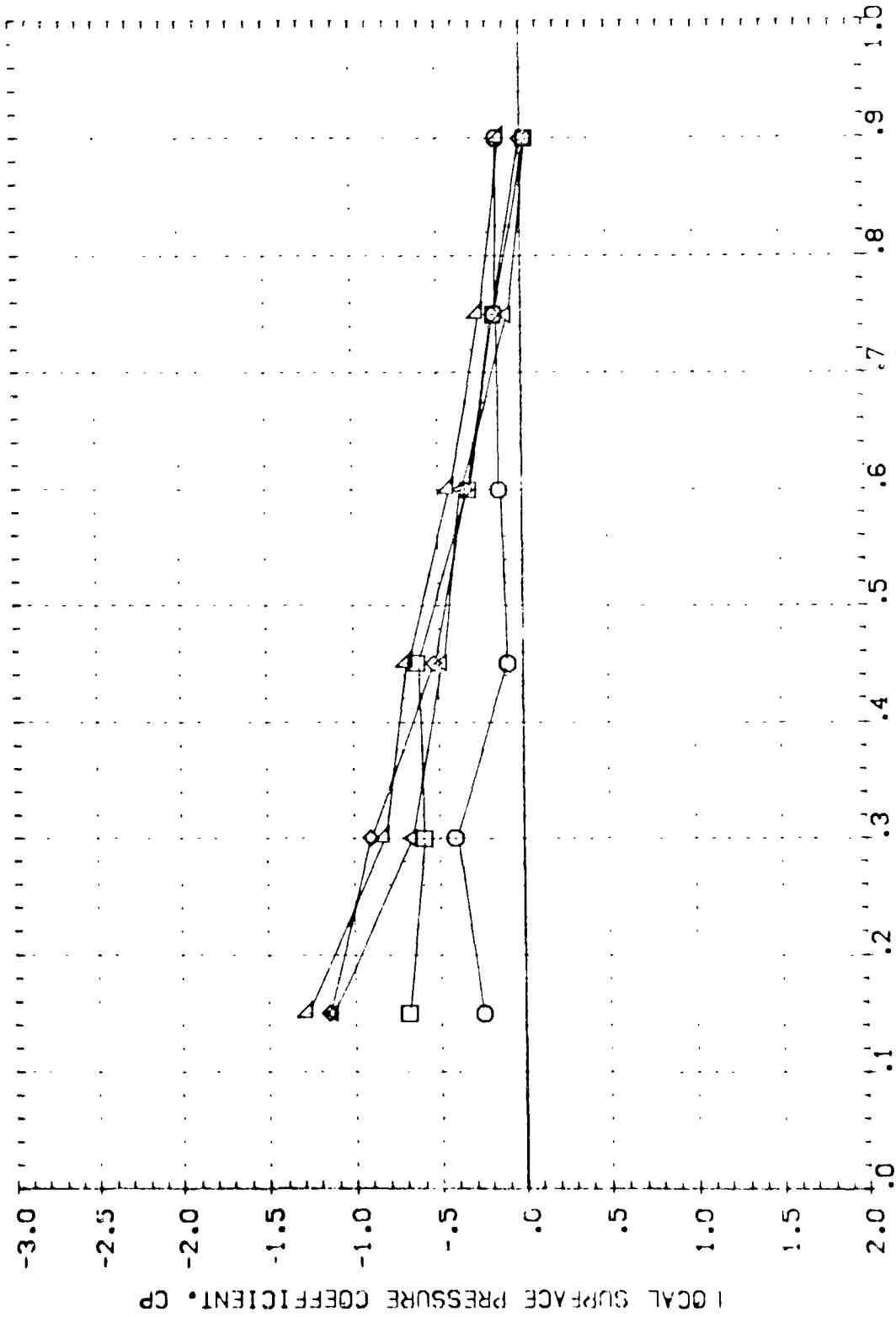


FIG 73 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU62)

| SYMBOL | 2N/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|--------|------|-------------------|---------|--------|--------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | 10.000 | .165 | H/B | 1.500 | | |
| △ | .304 | | | ELEVON | -18.000 | | |
| □ | .500 | | | | | | |
| ◇ | .663 | | | | | | |
| △ | .873 | | | | | | |

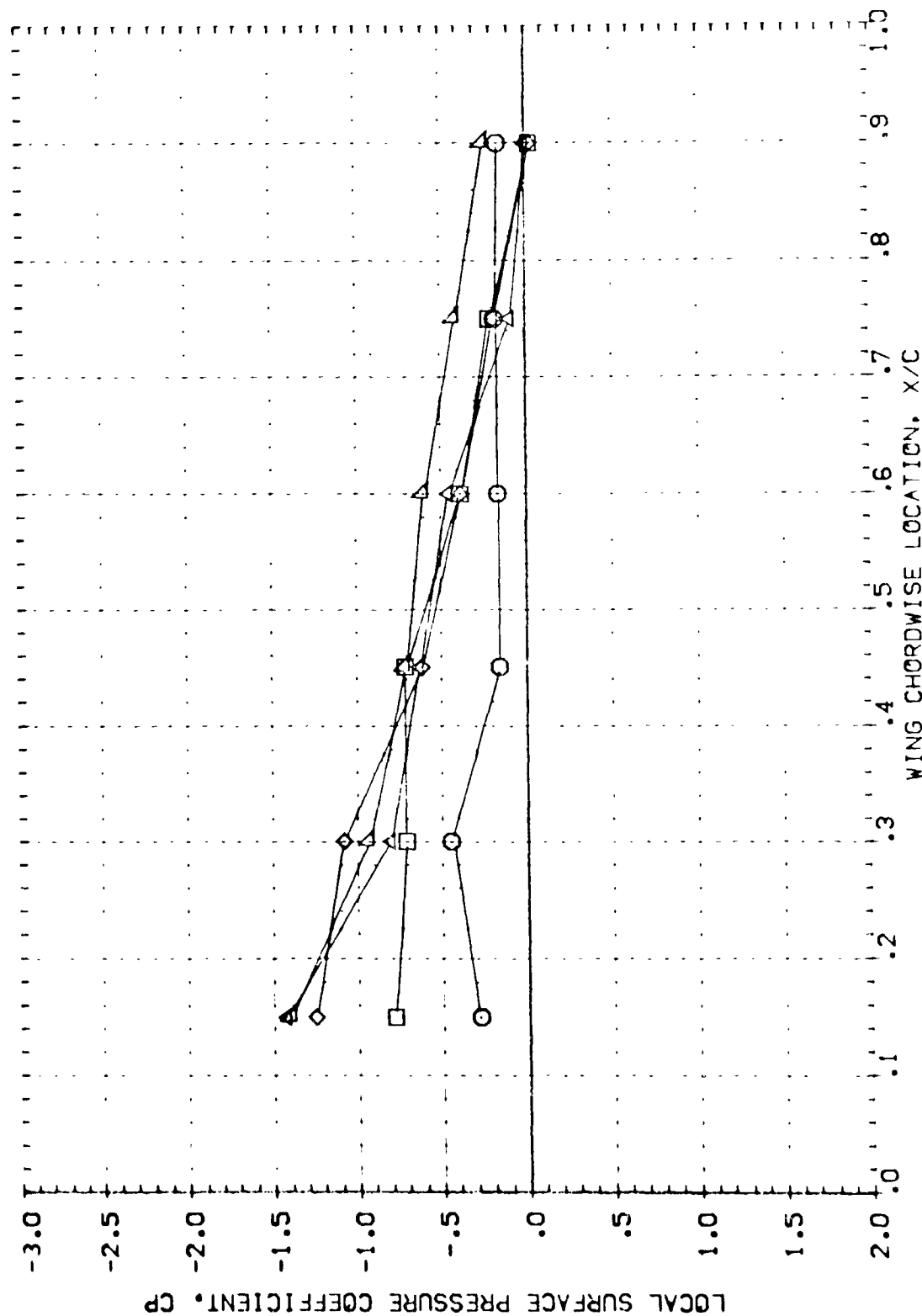


FIG 74 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH 142, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU59)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | ELEVON |
| ○ | .000 | -.010 | .165 | .000 | .000 | 1.500 |
| △ | .334 | | | .125 | .800 | -10.000 |
| □ | .500 | | | | | |
| ◇ | .603 | | | | | |
| × | .873 | | | | | |

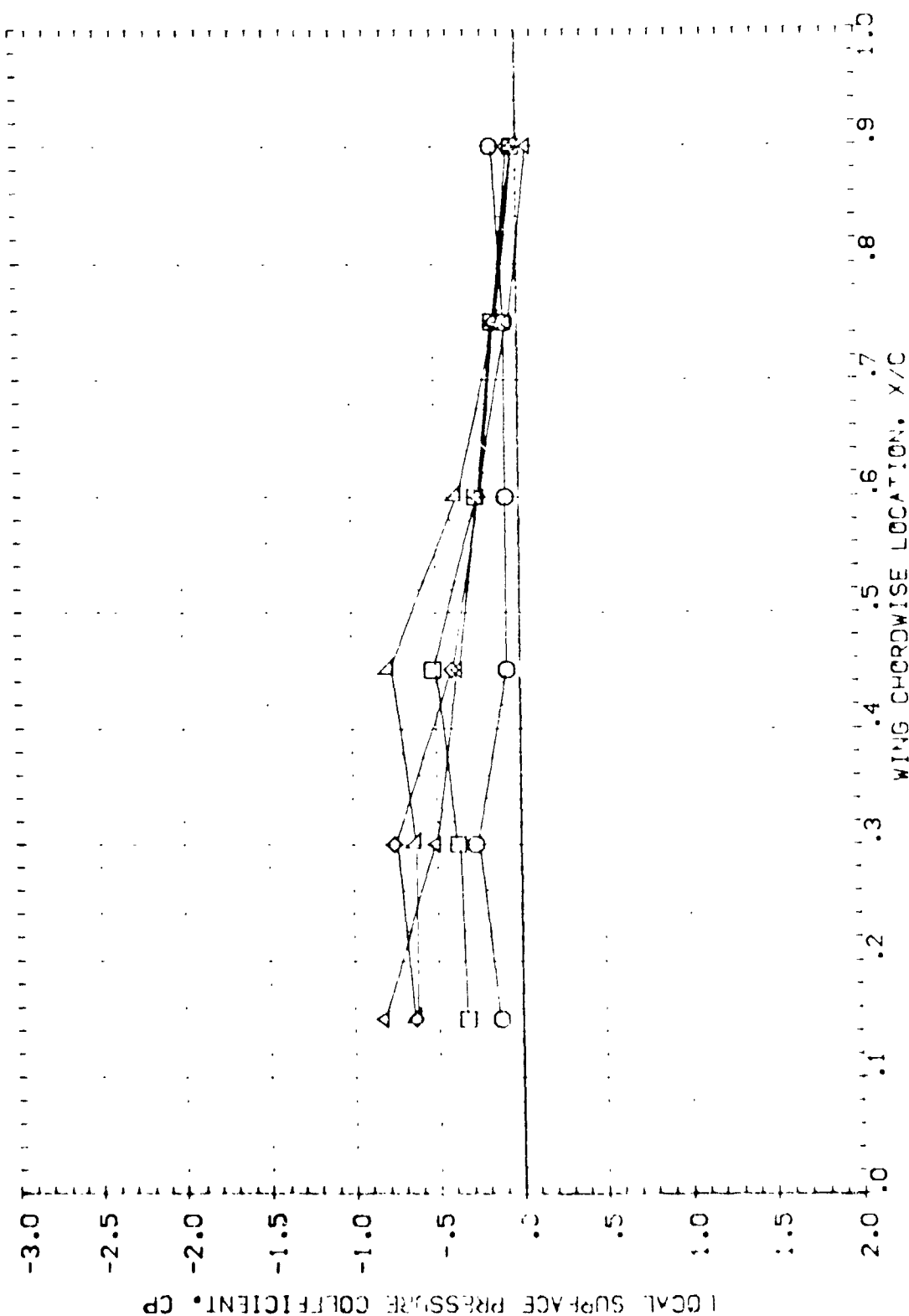


FIG 74 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU59)

| SYMBOL | 2N/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | 9.955 | .165 | H/B | .000 | .125 | .000 |
| ◇ | .104 | | | ELEVON | .000 | .000 | 1.500 |
| △ | .570 | | | | | | -18.000 |
| □ | .653 | | | | | | |
| × | .873 | | | | | | |

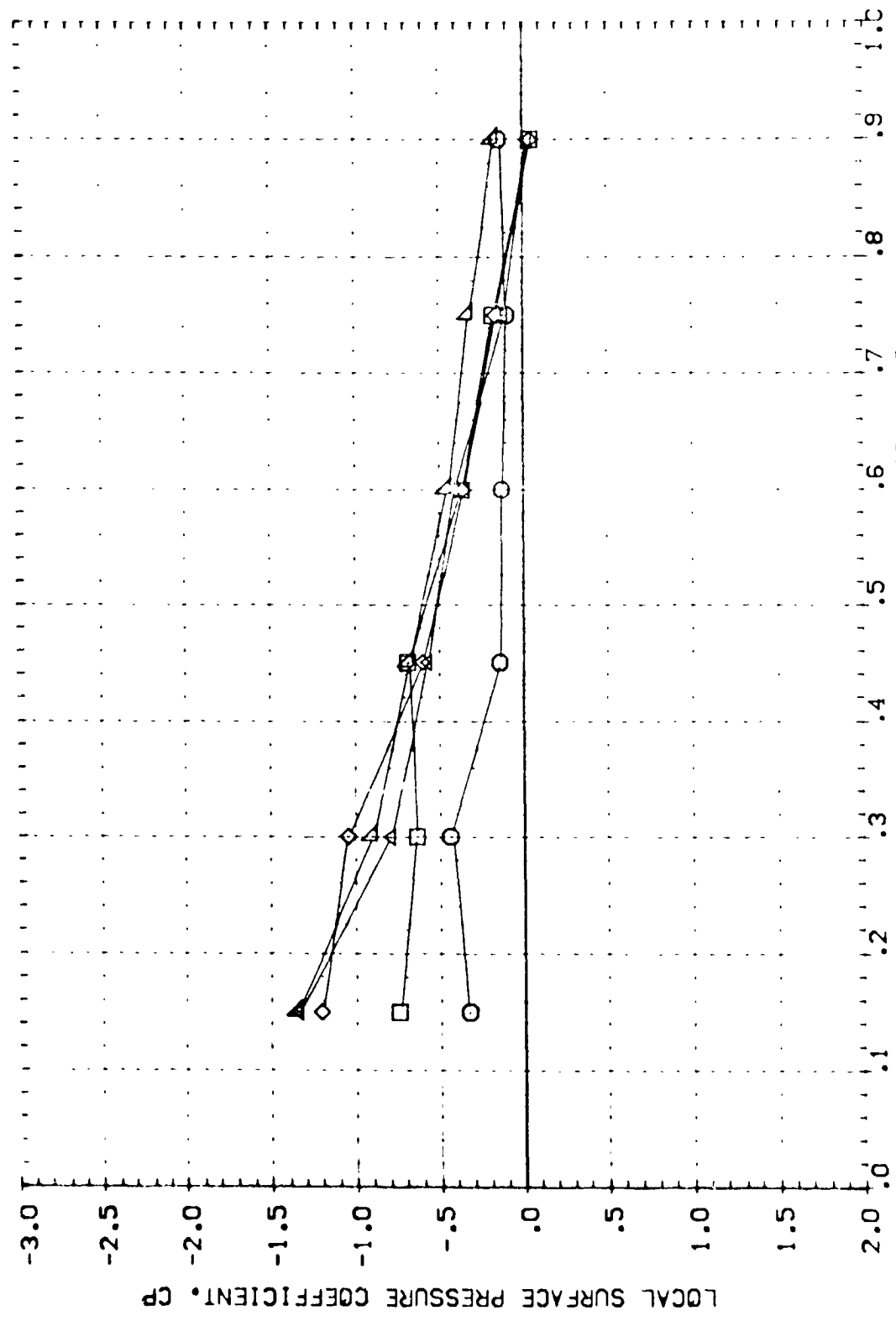


FIG 74 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON
WING CHORDWISE LOCATION, X/C
PAGE 341

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU68)

PARAMETRIC VALUES
 $\rho V^2 / p$ 1.500
 BFLAP -18.000
 β .000
 H/B .205
 ELEVON .000

Symbol $2\alpha/B$ ALPHA MACH
 .000 .010 .165
 .304
 .520
 .663
 .873

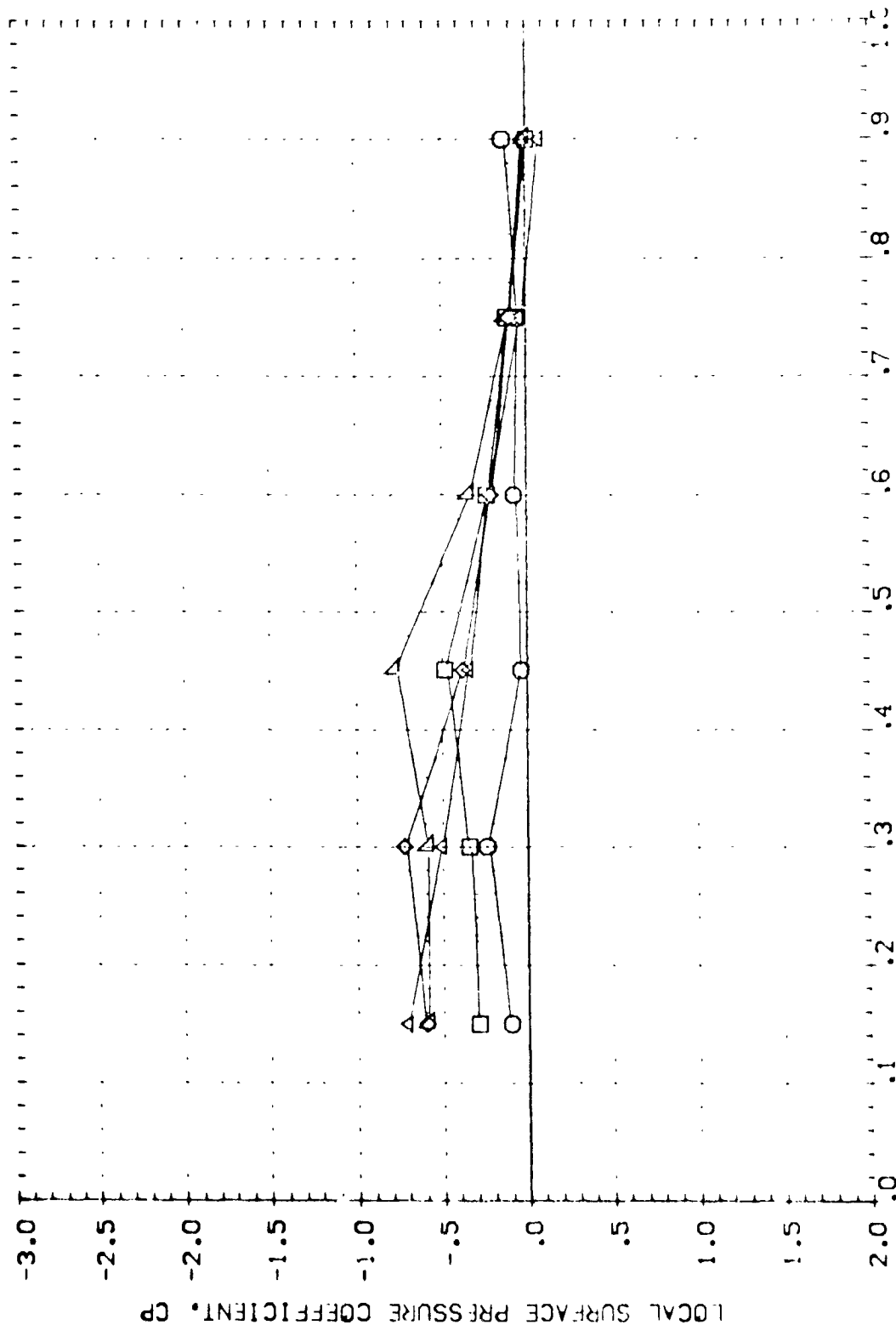


FIG 74 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, $\rho V^2 / p = 1.5$, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING UPPER SURFACE (RDVU68)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .286 BOFLAP -18.000
 ELEVON .000

ALPHA 8.980
 MACH .165

SYMBOL
 0.00
 .334
 .570
 .653
 .673

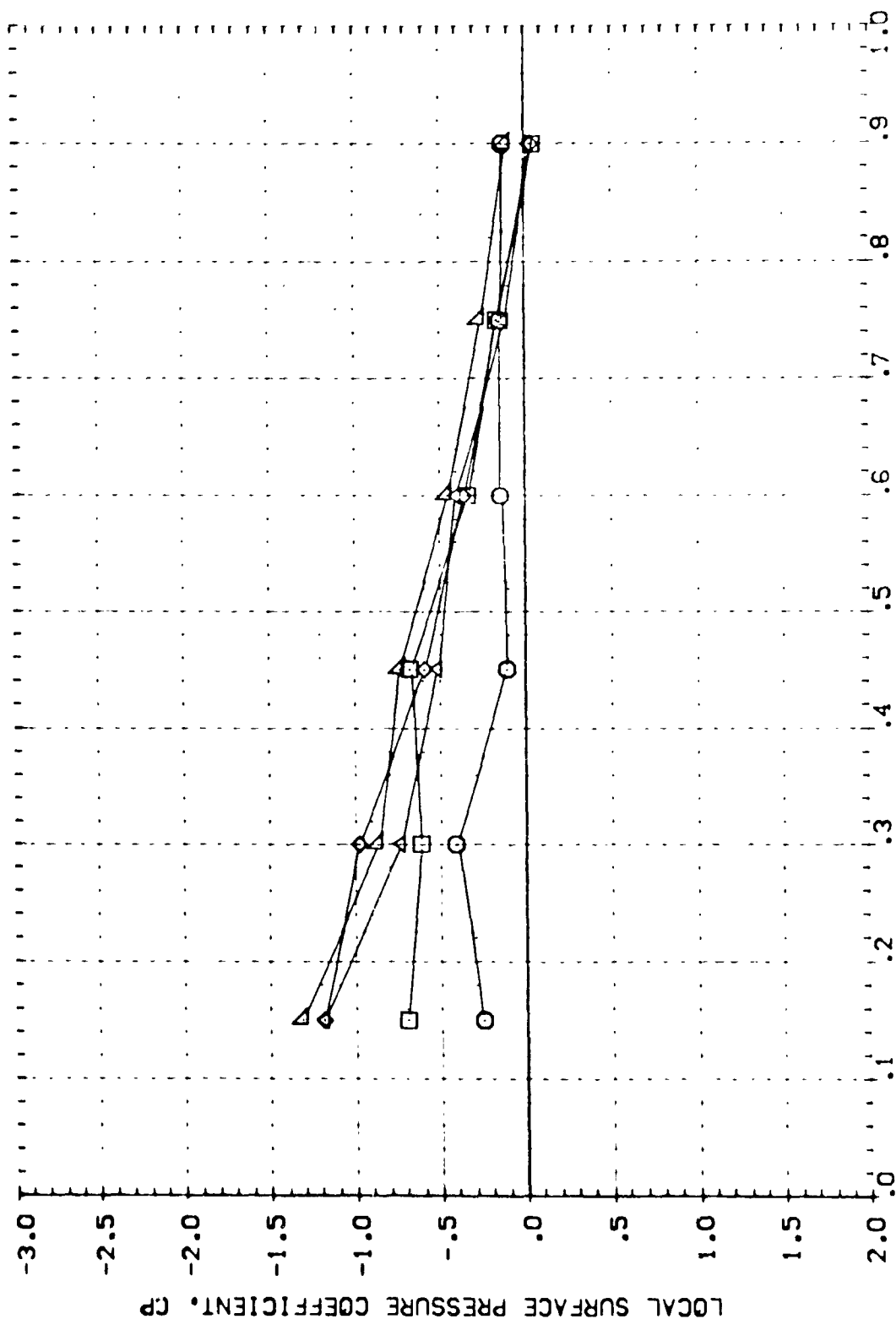


FIG 74 WING UPPER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON

0157-B 8:6C5F1 J40 W87E18 WING LOWER SURFACE (RDVL03)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .039 BOFLAP -18.000
 ELEVON .000

SYMBOL 2X/B ALPHA MACH
 O .000 10.000 .165
 .394
 .520
 .653
 .873

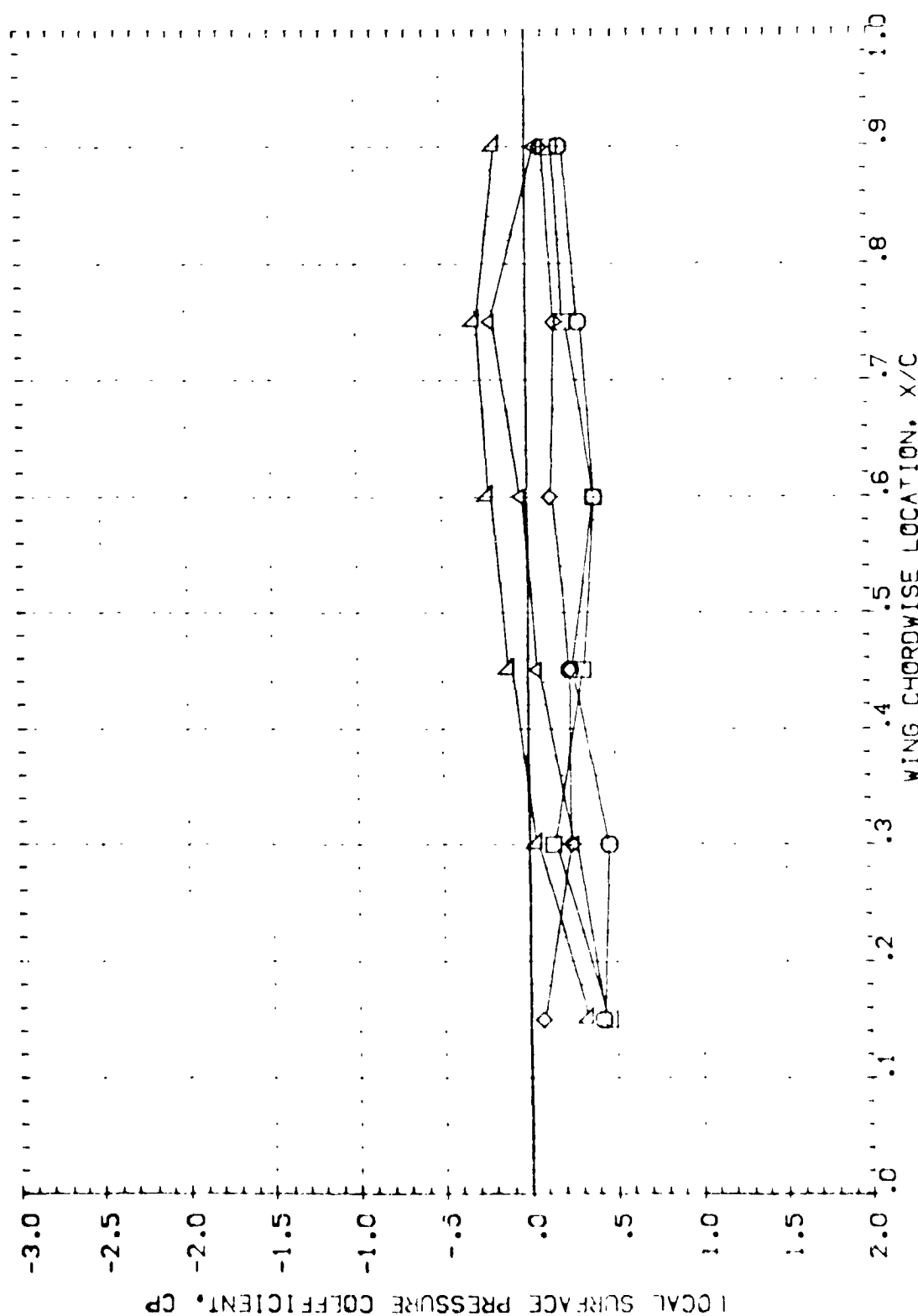
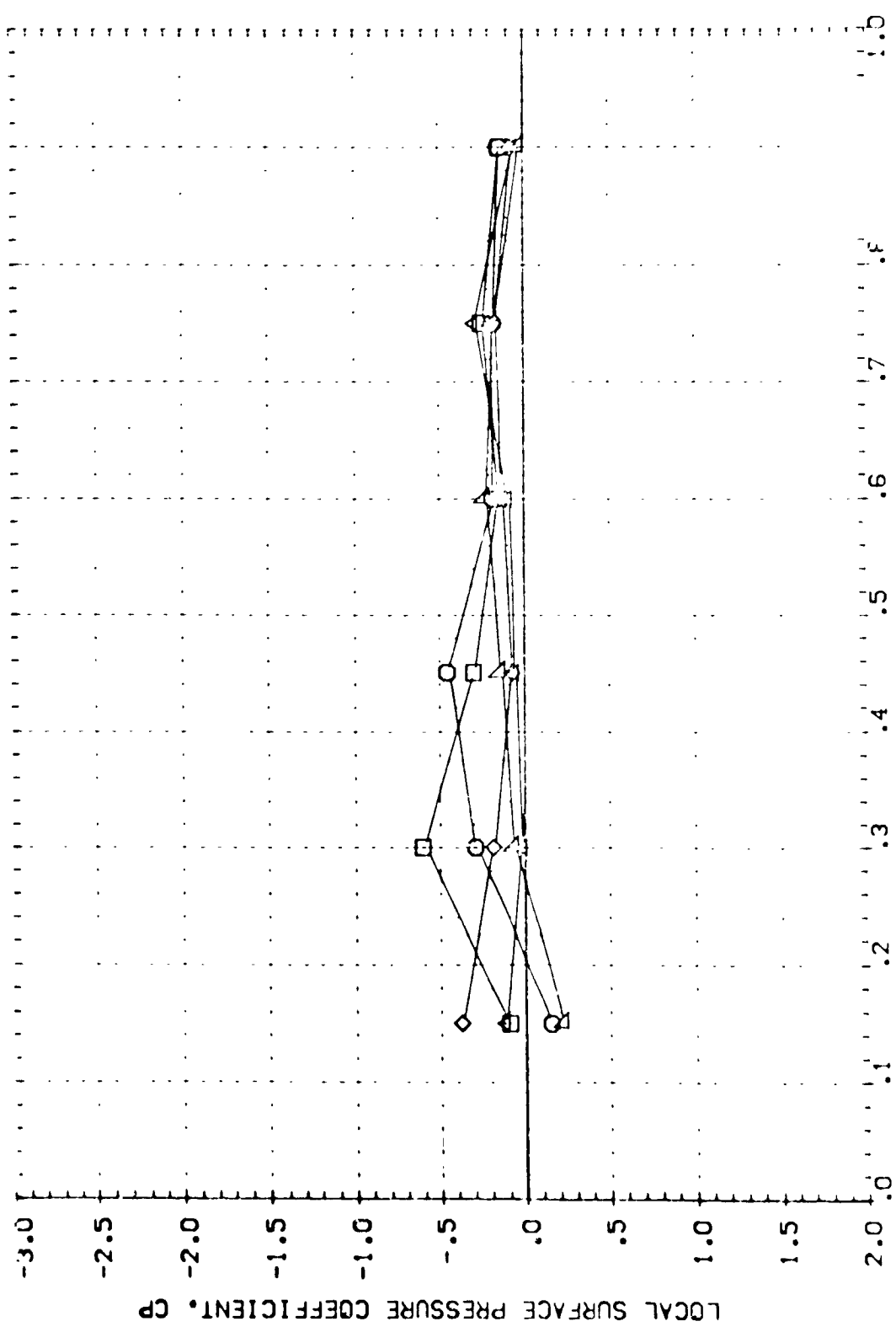


FIG 75 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B 916C5F1 J40 W87E18 WING LOWER SURFACE (RDVL06)

PARAMETRIC VALUES
 BETA .000 PTV/P 1.000
 H/B .125 BOFLAP -18.000
 ELEVON .000

SYMBOL 2V/B ALPHA MACH
 O .000 .010 .165
 □ .304
 ◇ .570
 △ .663
 ○ .873



WING CHORDWISE LOCATION, X/C

FIG 75 WING LOWER SURFACE PRESSURE COEFFICIENTS WITH J40, PTV, ELEVON
 PAGE 345

QAS7-3 316C5F1 J40 W87E18 WING LOWER SURFACE (RDV L06)

| | | | | | |
|--------|------|--------|------|--------|-------------------|
| SYMBOL | 27/8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | 10.015 | .165 | H B | .000 |
| ○ | .334 | | | ELEVON | .125 |
| ○ | .520 | | | | .000 |
| ○ | .663 | | | | 1.000 |
| ○ | .873 | | | | -18.000 |

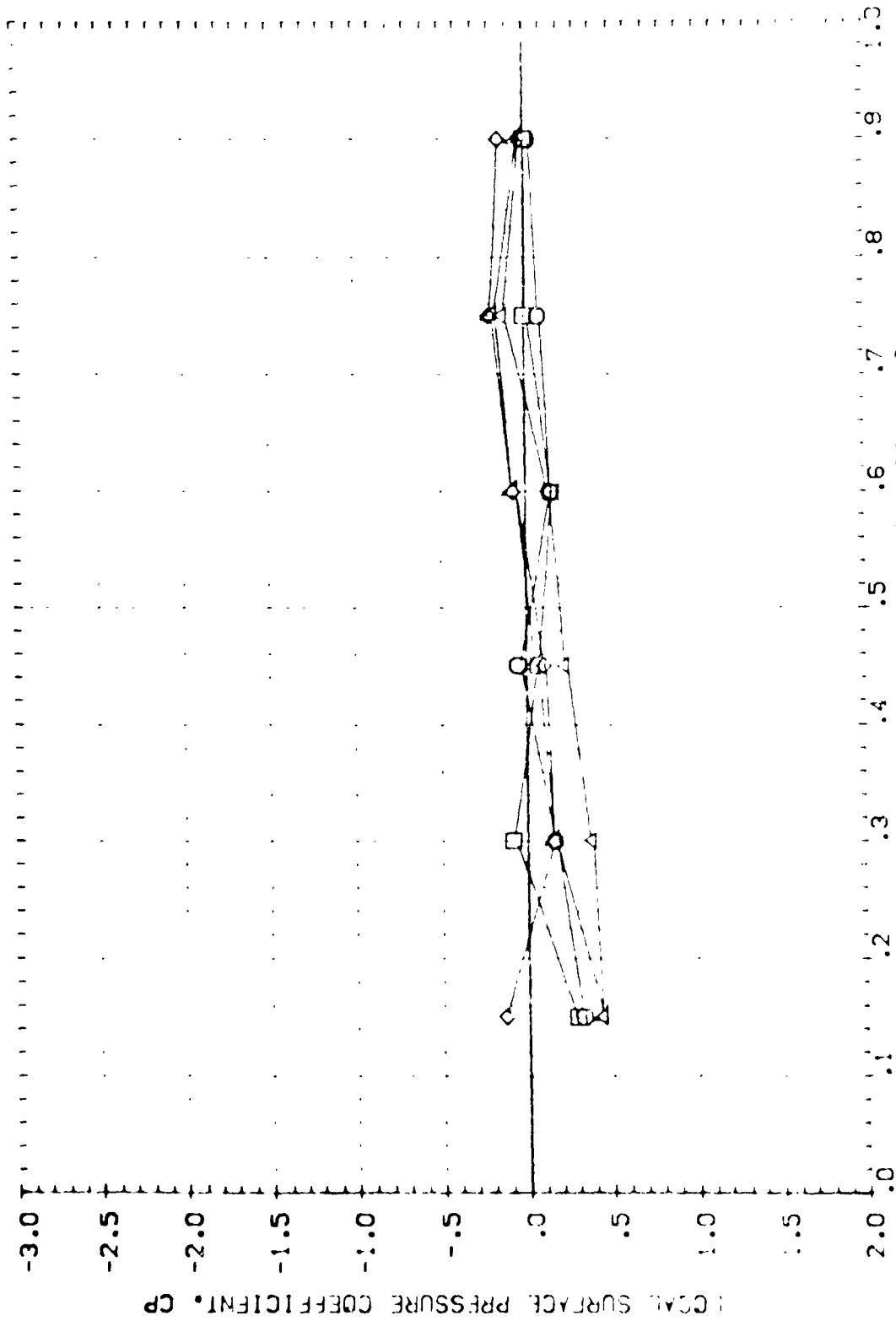


FIG 75 WING LOWER SURFACE PRESSURE COEFFICIENTS AT $\alpha = 14.0^\circ$, $PTV = 1.0$, $C_{LE} = 0.0$
 WING CHORDWISE LOCATION, x/c
 PAGE 346

| PARAMETER VALUES | |
|------------------|--------|
| BETA | .000 |
| H/B | .286 |
| ELEV | .000 |
| P/N/P | 1.000 |
| BOLAP | -1.000 |

| STAGE | 27/8 | ALPHA | WCH | SE |
|-------|------|-------|------|------|
| 1 | 0.00 | 0.015 | 0.01 | 0.01 |
| 2 | 0.01 | 0.015 | 0.01 | 0.01 |
| 3 | 0.02 | 0.015 | 0.01 | 0.01 |
| 4 | 0.03 | 0.015 | 0.01 | 0.01 |

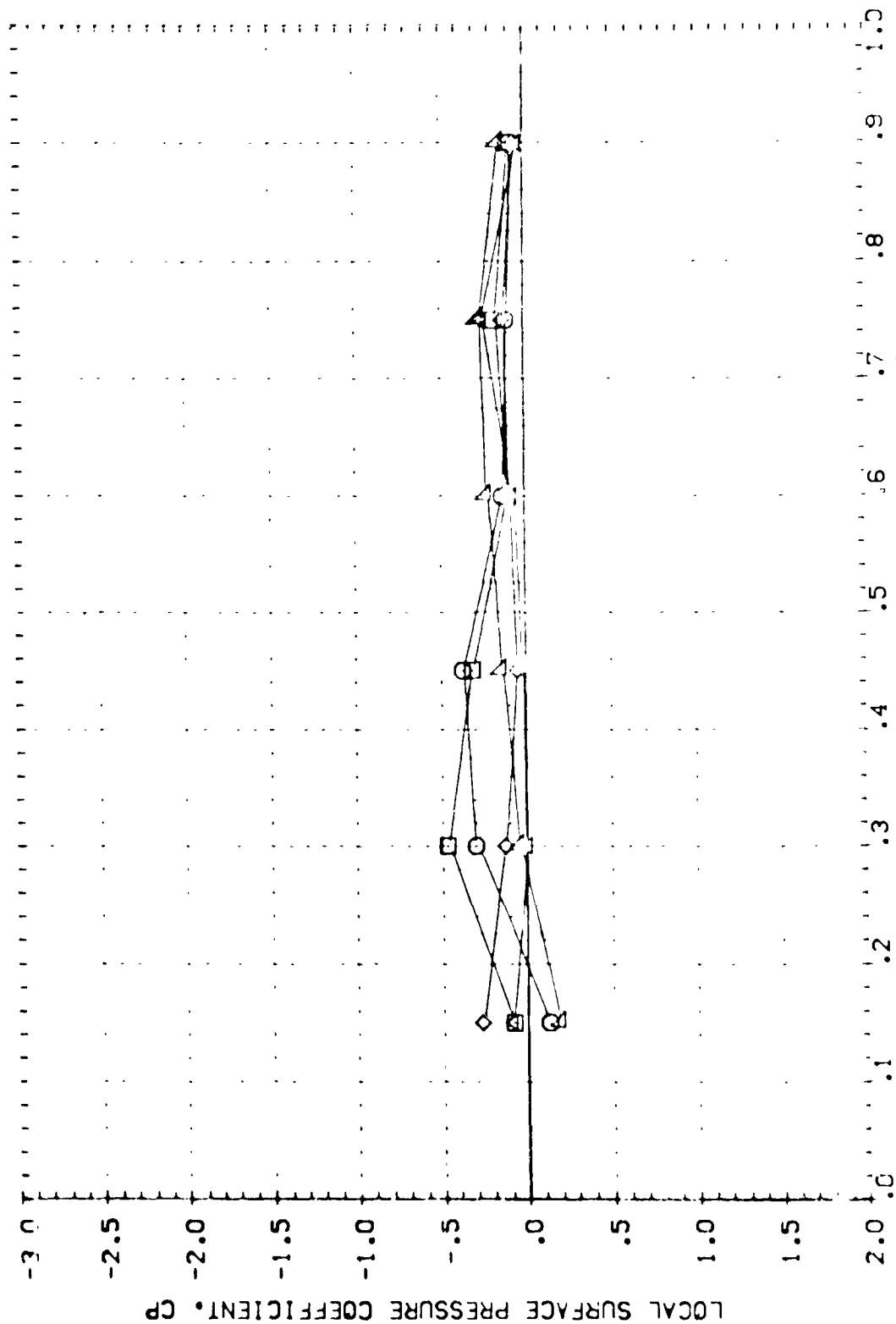


FIG. 5. WING LOWER SURFACE PRESSURE COEFFICIENTS AT $M = 0.70$, $PN/P_\infty = 1.0$, $\alpha = 0^\circ$. WING CHORDWISE LOCATION, X/C

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDV-15)

PARAMETRIC VALUES
 .000 PTN/P 1.000
 .296 BOFLAO -18.000
 .000

BETA
 H/B
 ELEVON

ALPHA
 10.015

2Y/B
 .000
 .334
 .570
 .653
 .873

SYMBOL

○

□

△

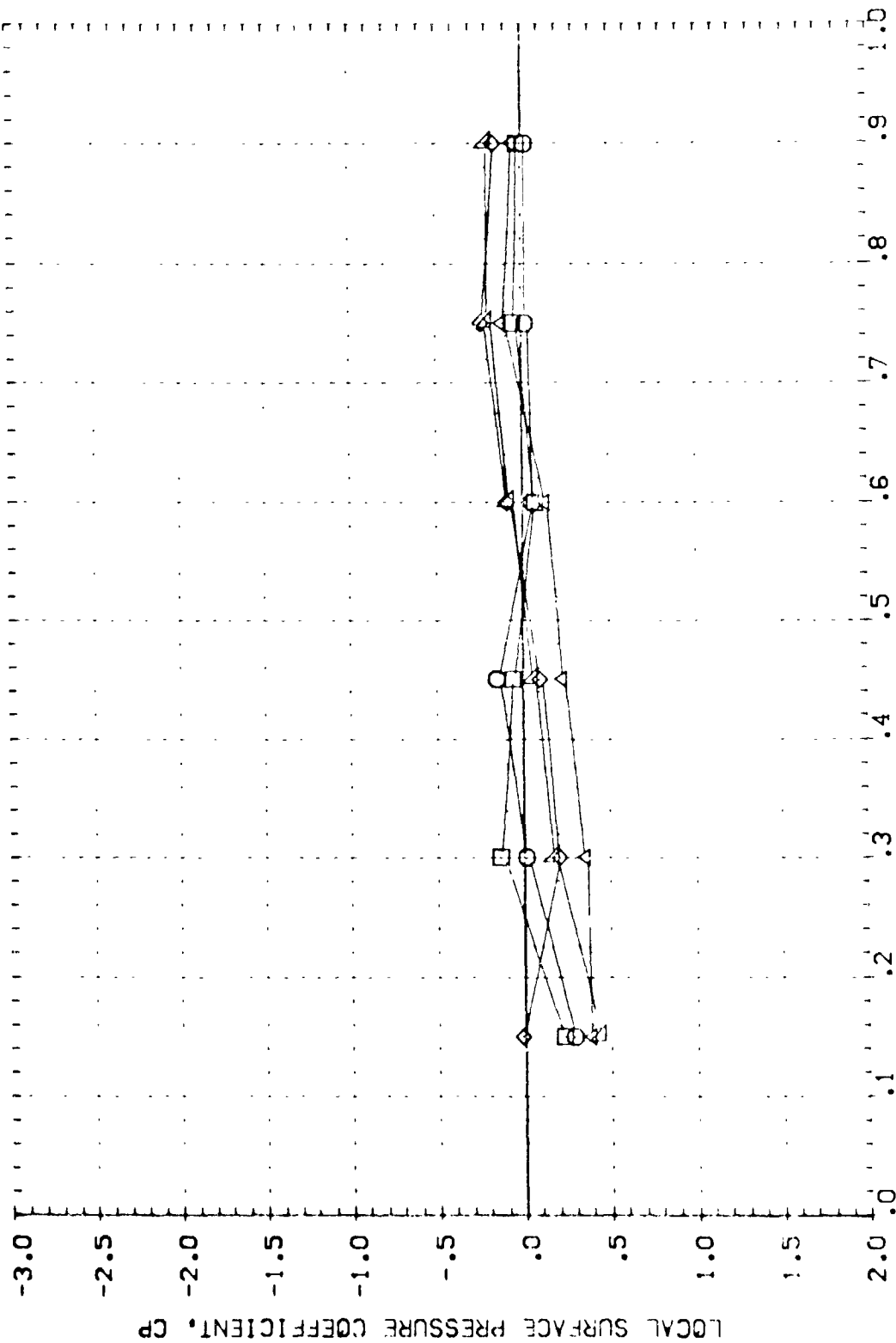


FIG 75 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 0 ELEVON

0A57-B 916C5F1 J40 W87E18 WING LOWER SURFACE (RDVL04)

| | | | | | | | |
|--------|------|--------|-------|------|-------|--------|--------|
| SYMBOL | 2Y/B | ALPHA | HATCH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | 10.000 | .165 | .000 | 1.300 | | |
| ◇ | .334 | | | .030 | | | |
| △ | .520 | | | .000 | | | |
| □ | .653 | | | | | | |
| △ | .873 | | | | | | |

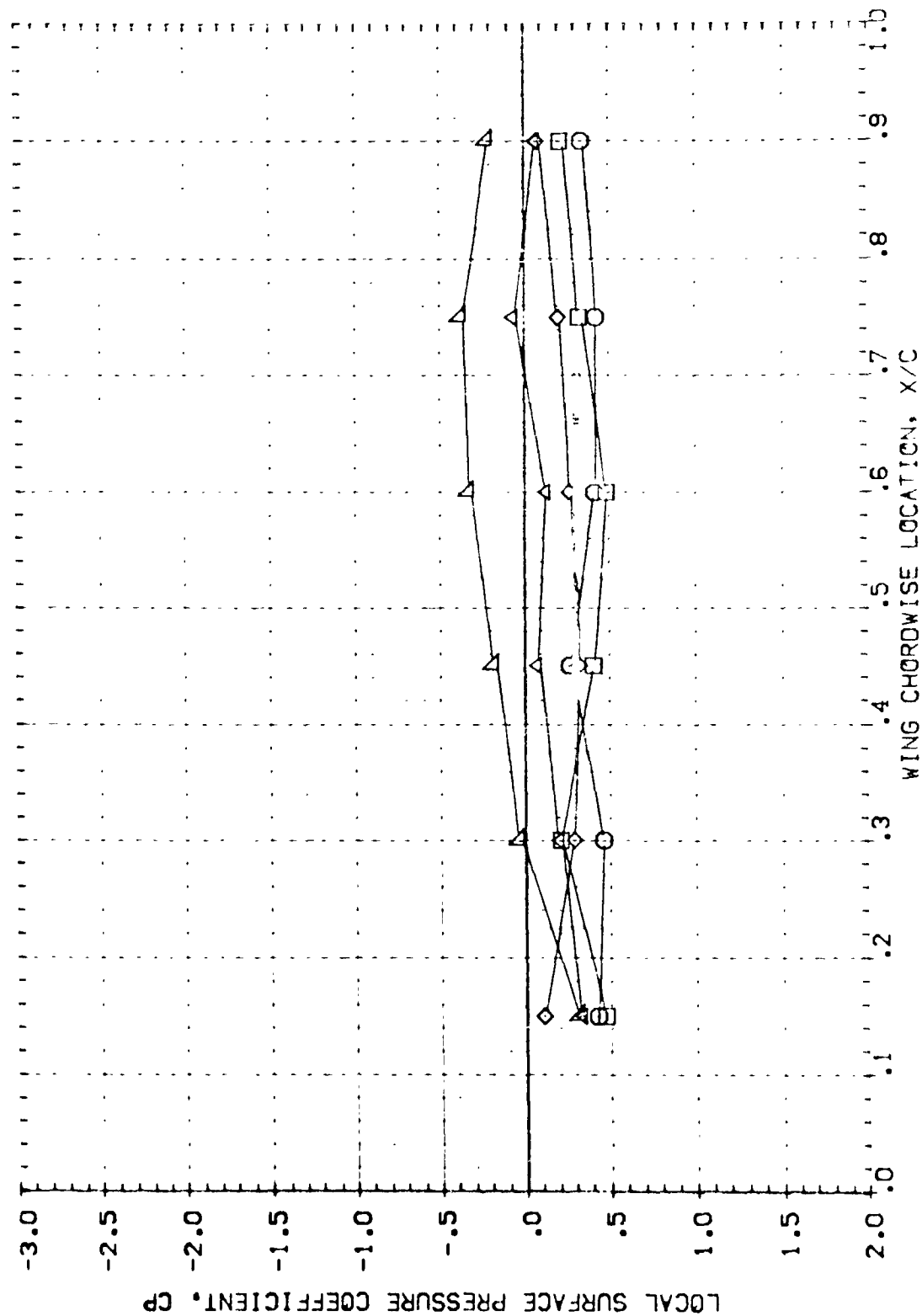


FIG 76 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J40 W87E18 WING LOWER SURFACE (RDVL07)

PARAMETRIC VALUES
 BETA PTN/P 1.300
 H/B BOFLAP - 8.000
 ELEVON .000

SYMBOL 2Y/B ALPHA MACH
 0 .000
 1 .334
 2 .520
 3 .650
 4 .873

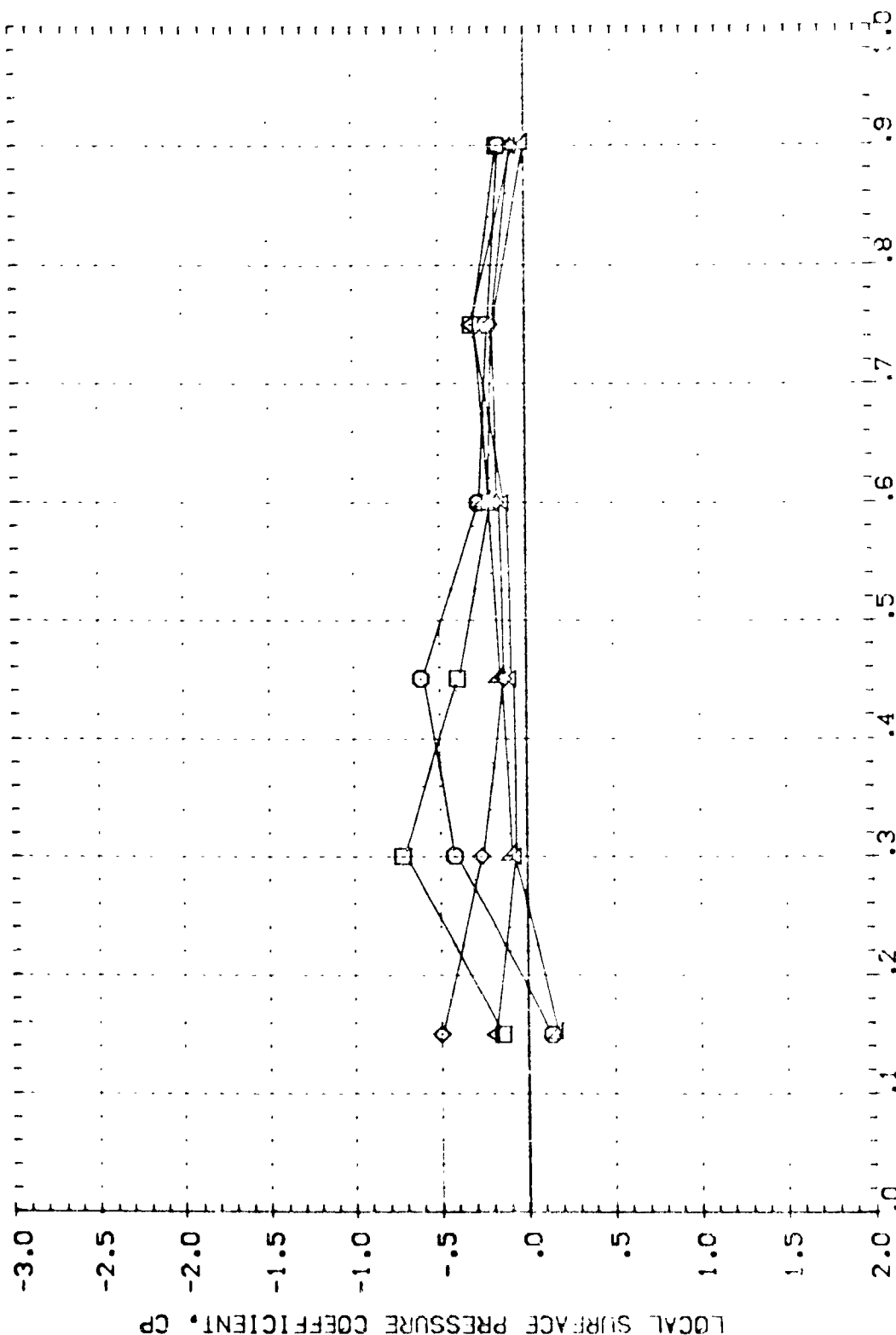


FIG 76 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELEVON
 WING CHORDWISE LOCATION, X/C

0A57-B 3:605F1 J40 W87E18 WING LOWER SURFACE(RDVLO7)

| | | | | | | |
|--------|------|-------|------|--------|-------------------|---------|
| SYMBOL | 2X/B | ALPHA | MACH | BETA | PARAMETRIC VALUES | |
| | .000 | 9.975 | .165 | H/B | PTN/P | 1.300 |
| | .364 | | | ELEVON | BOFLAP | -18.000 |
| | .570 | | | | | |
| | .653 | | | | | |
| | .375 | | | | | |

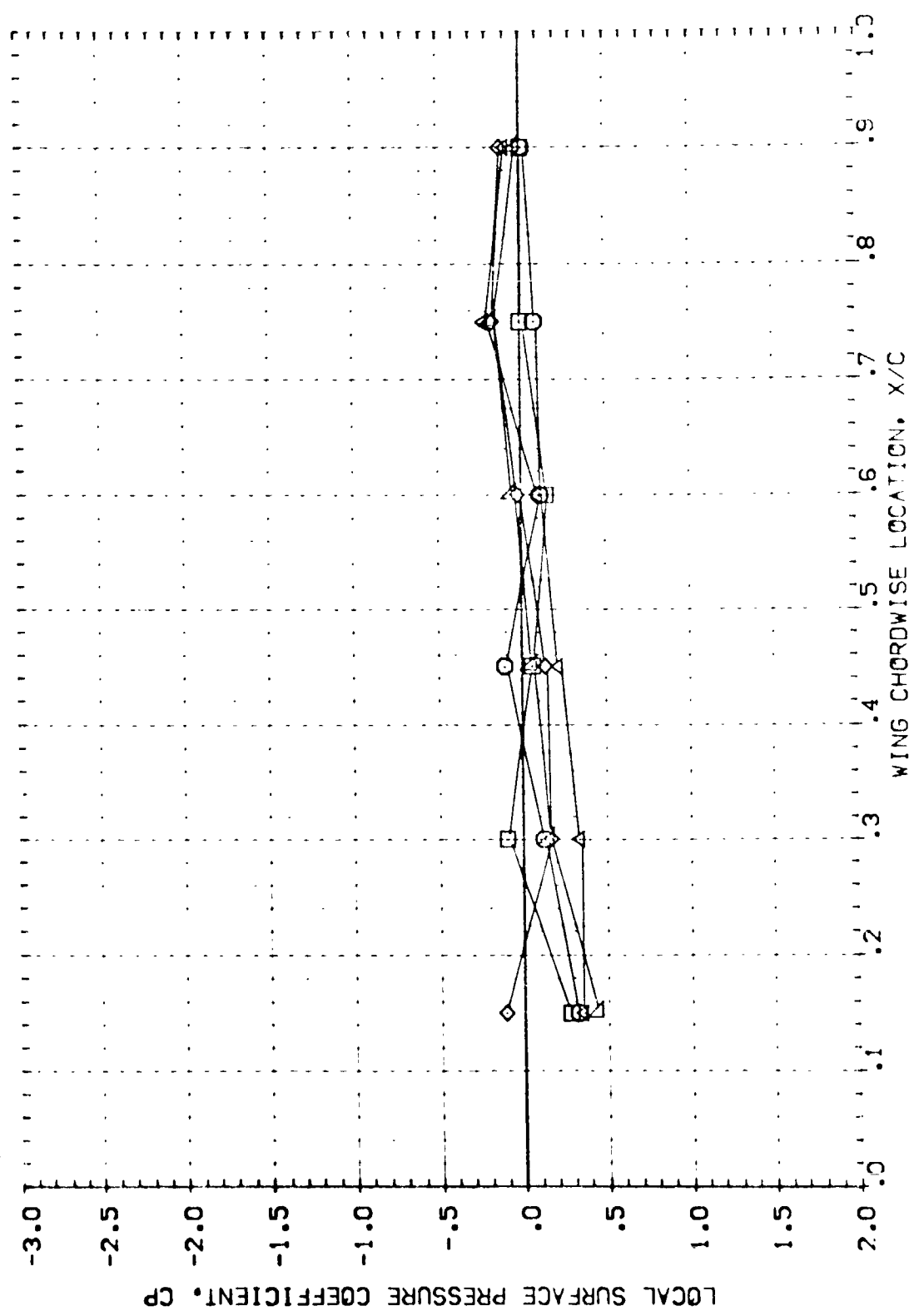


FIG 76 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL17)

| SYMBOL | Z1/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | 1,300 |
| ○ | .000 | .005 | .165 | H/B | .286 | -18,000 |
| ◇ | .304 | | | ELEVON | .000 | |
| △ | .520 | | | | | |
| □ | .663 | | | | | |
| ⊙ | .873 | | | | | |

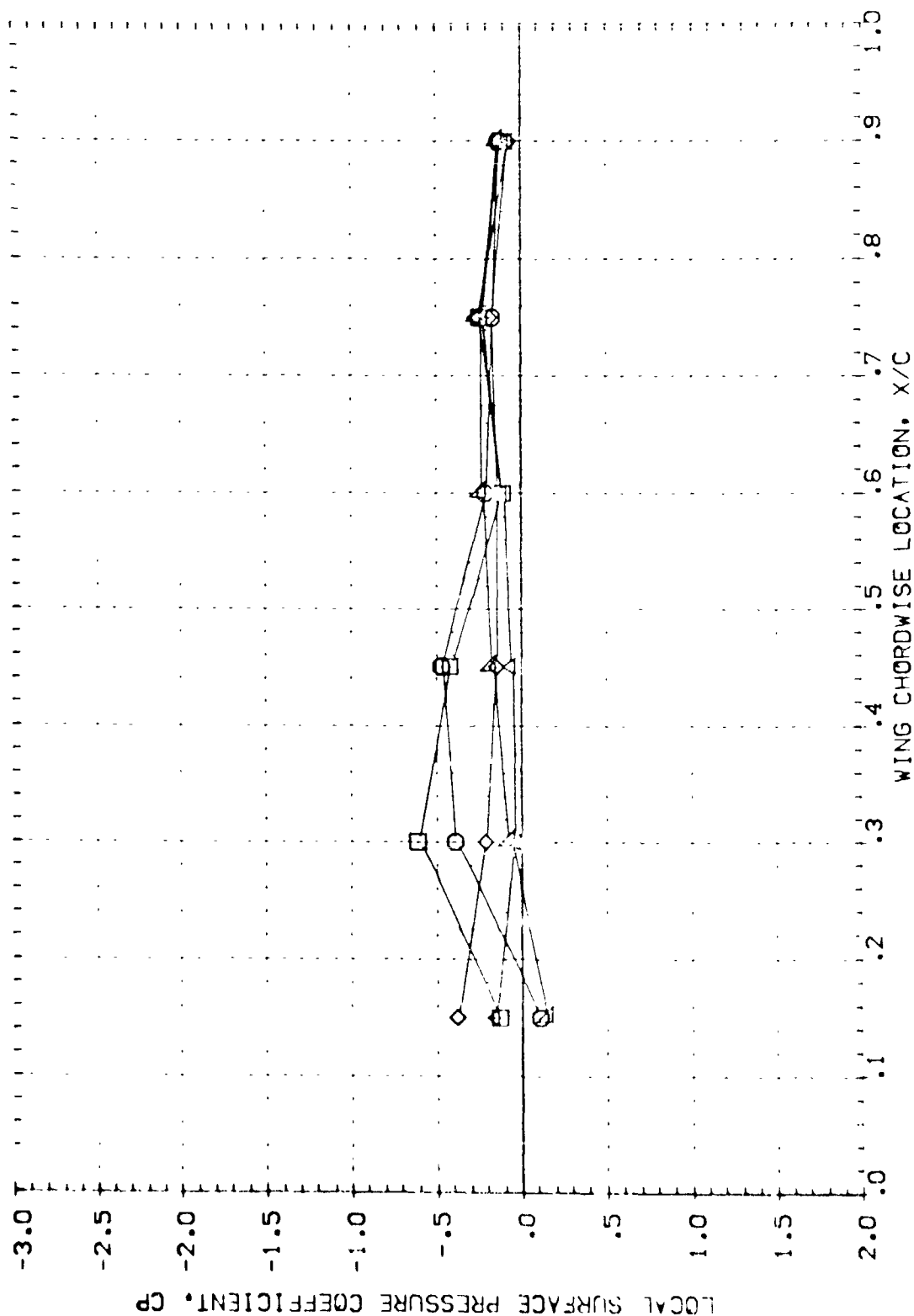


FIG 76 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE(RDVL17)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | BOFLAP |
| ○ | .000 | 9.975 | .165 | H/B | 1.300 | -18.000 |
| ◇ | .334 | | | ELEVON | .286 | |
| △ | .520 | | | | .000 | |
| □ | .653 | | | | | |
| ▽ | .873 | | | | | |

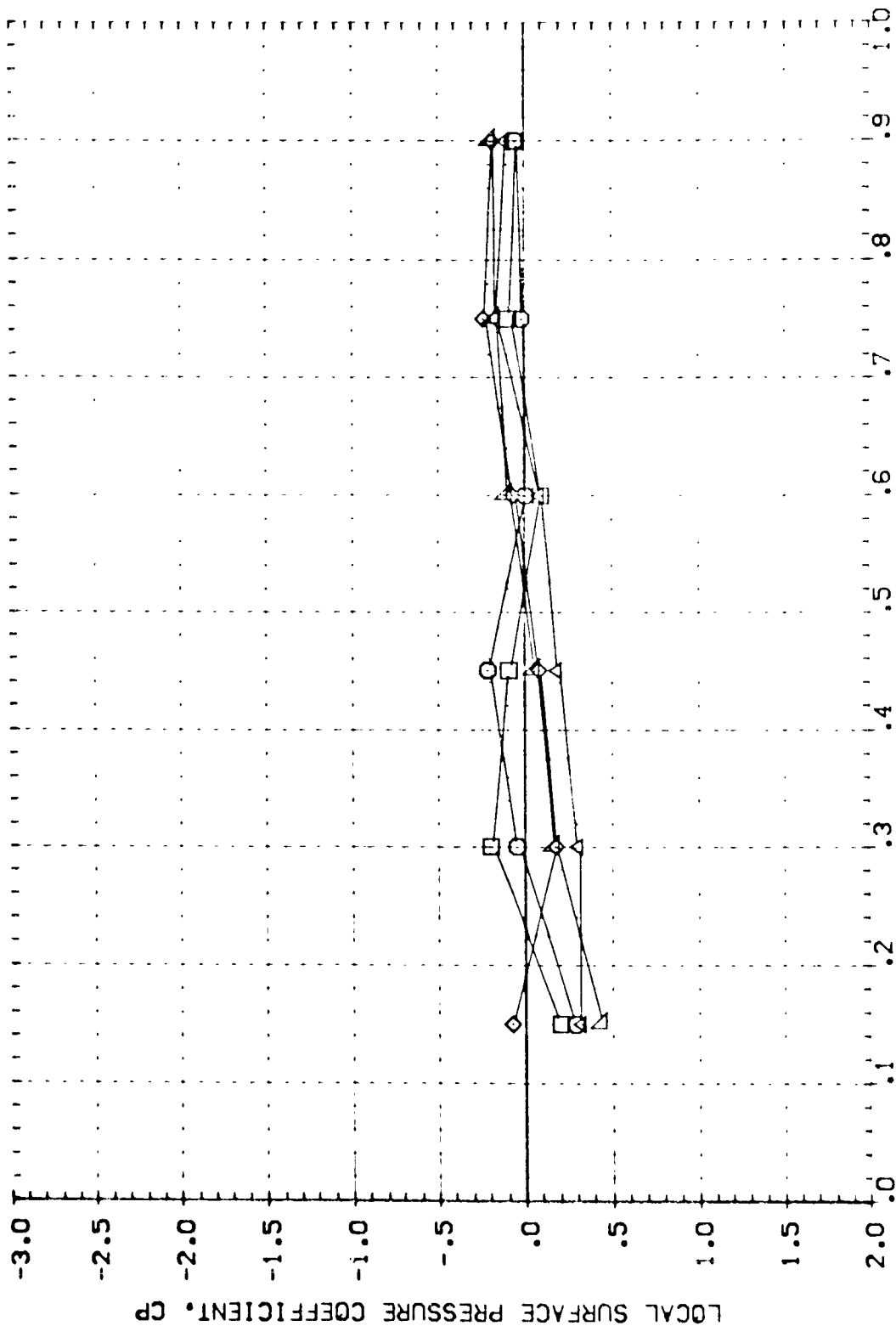


FIG 76 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELEVON

0A57-B B16CSF1 J40 W87E18 WING LOWER SURFACE (RDVL05)

| | | | | | | | |
|--------|------|-------|------|-------------------|------|--------|---------|
| SYMBOL | 2X/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
| ○ | .000 | 9.990 | .165 | BETA | .000 | PTN/P | 1.500 |
| △ | .334 | | | H/B | .039 | BOFLAP | -18.000 |
| □ | .520 | | | ELEVON | .000 | | |
| ◇ | .663 | | | | | | |
| × | .873 | | | | | | |

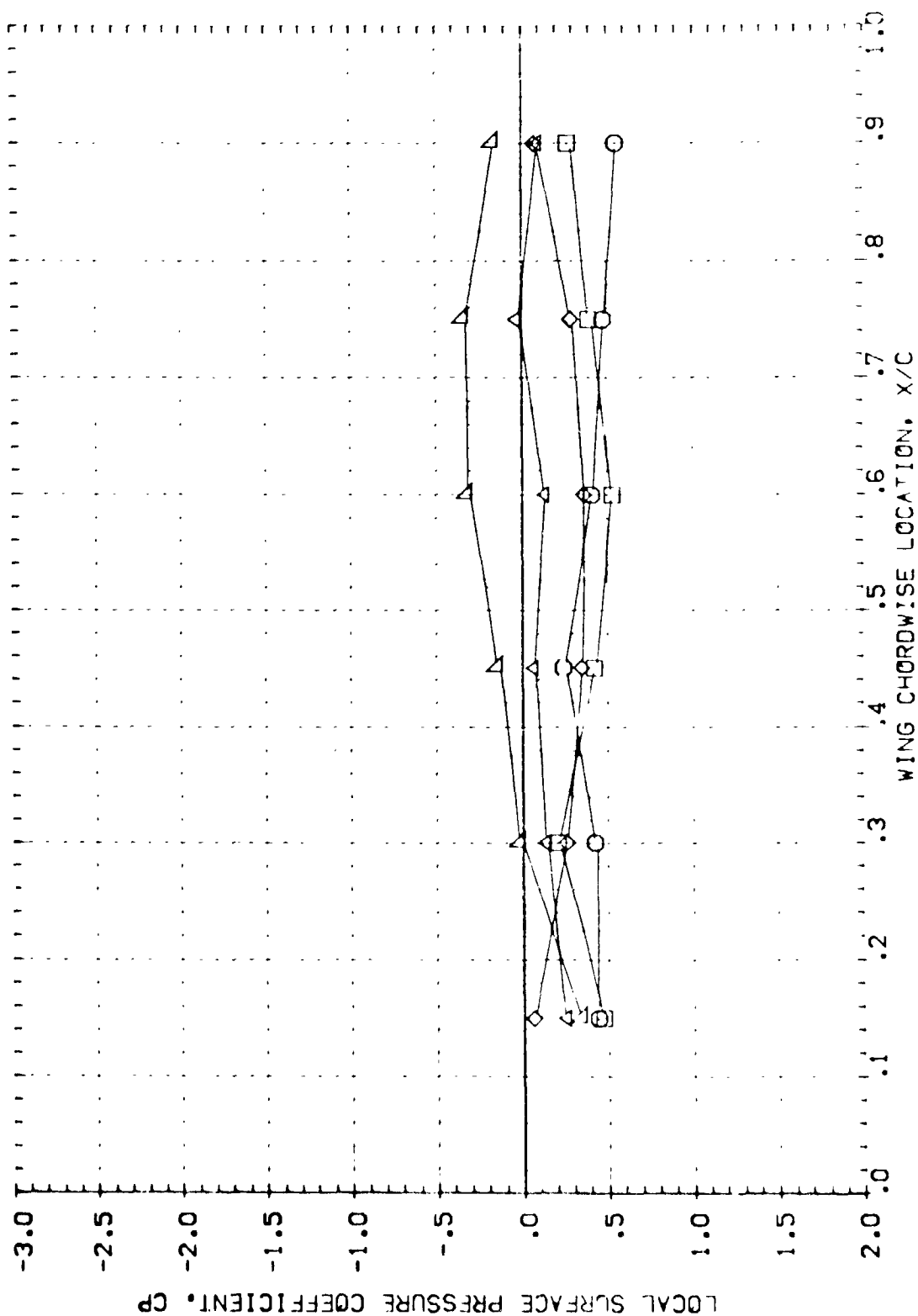


FIG 77 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 0 ELEVON

0A57-B 816C5F1 J40 W87E18 WING LOWER SURFACE (RDVL08)

| SYMBOL | Z1/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|--------|---------|
| | | | | BETA | PTN/P | 1.500 |
| ○ | .000 | -.030 | .165 | H/B | BOFLAP | -18.000 |
| ◇ | .304 | | | ELEVON | | |
| △ | .520 | | | | | |
| □ | .663 | | | | | |
| ○ | .873 | | | | | |

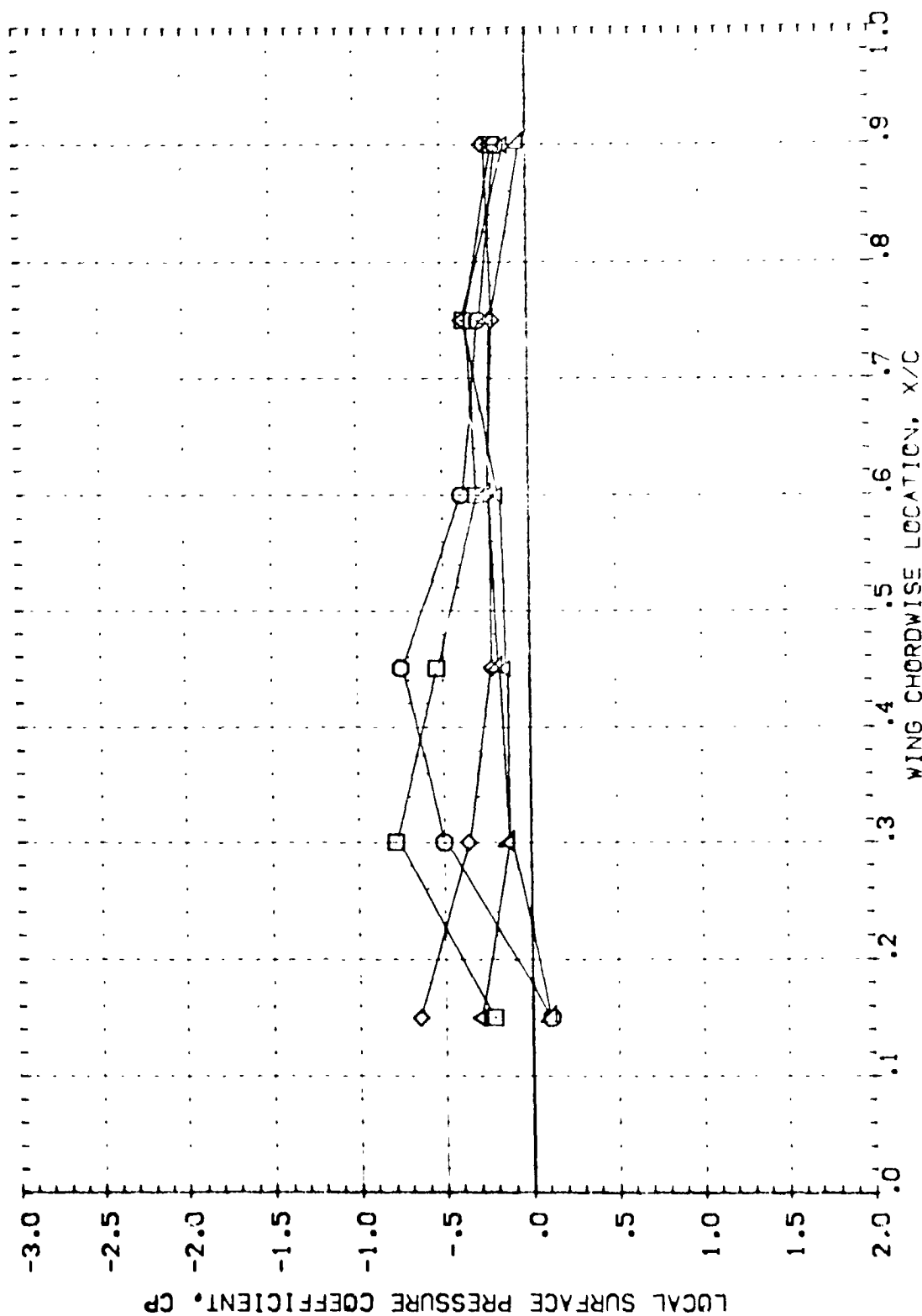


FIG 77 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 0 ELEVON

CA57-B 8:605F1 J40 W87E18 WING LOWER SURFACE (RDVL08)

| SYMBOL | Z/Y/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|-------|-------|------|-------------------|---------|---------|
| | | | | BETA | PTN/P | 1.500 |
| | .000 | 9.990 | .165 | H/B | 80% LAP | -18.000 |
| | .304 | | | ELEVON | .000 | |
| | .570 | | | | | |
| | .603 | | | | | |
| | .873 | | | | | |

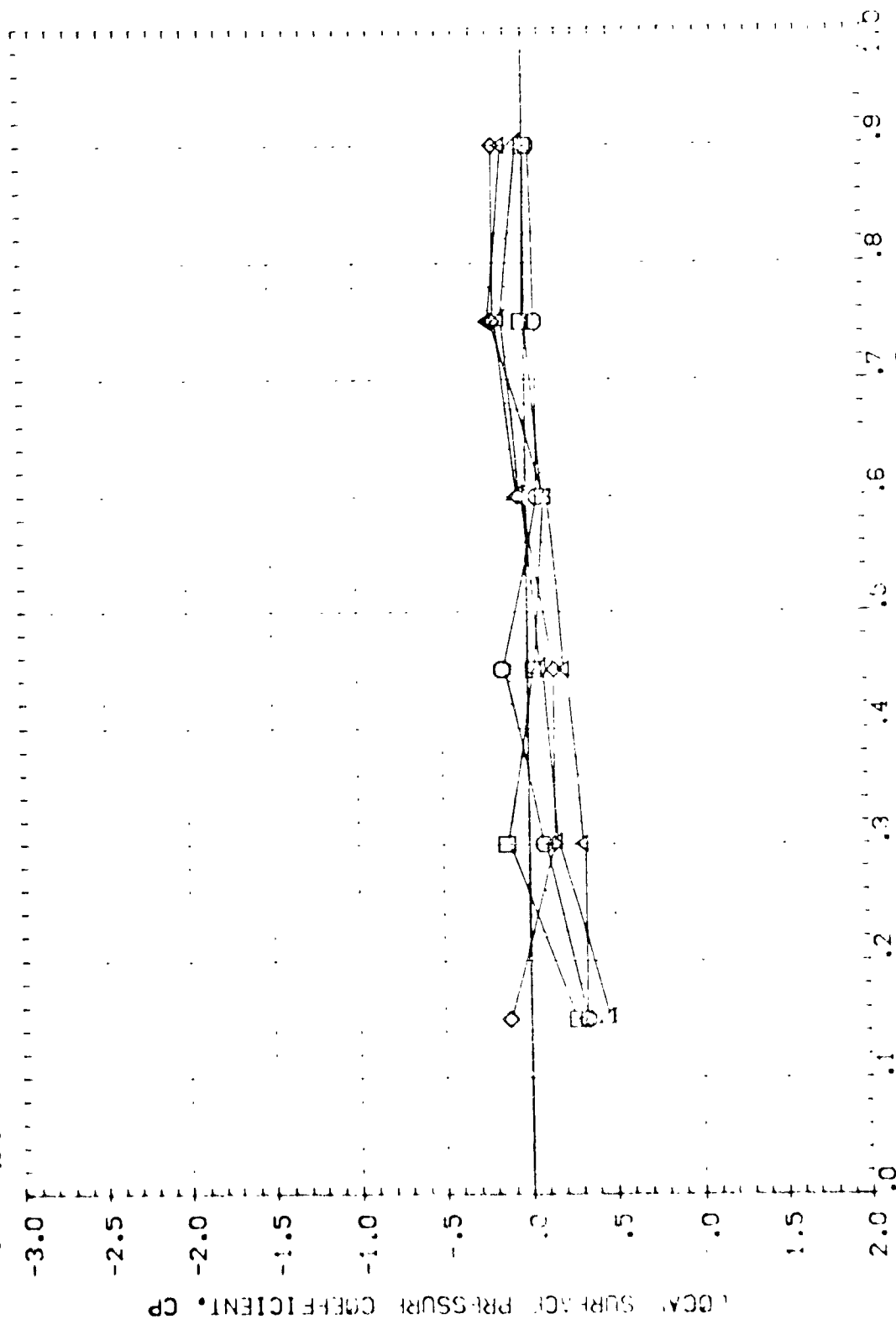


FIG 77 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL16)

| SYMBOL | Z/Y/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|-------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | |
| ○ | .000 | .015 | .165 | W/B | .000 | 1,500 |
| △ | .334 | | | ELEVON | .206 | -18,000 |
| □ | .500 | | | | .000 | |
| ◇ | .663 | | | | | |
| × | .873 | | | | | |

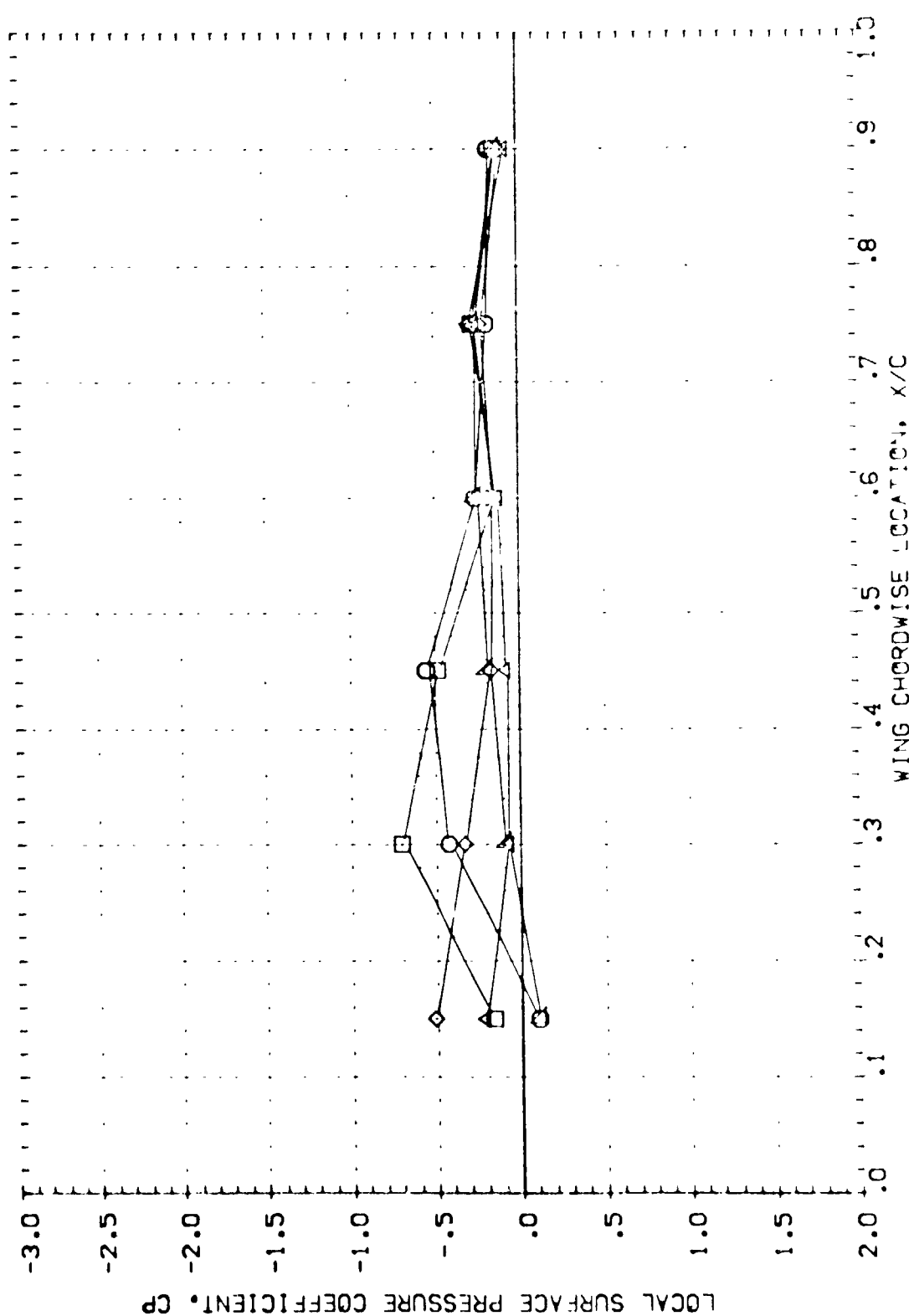


FIG 77 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 0 ELEVON
PAGE 35

CASE-8 B16CSE1 J40 W87E18 WING LOWER SURFACE (RD.116)

| | | | | | | |
|--------|------|--------|------|-------------------|--------------------|---------|
| SYMBOL | W/B | ALPHA | MACH | PARAMETRIC VALUES | | |
| 0 | .000 | 10.000 | .165 | BETA | PT ₀ /P | 1.500 |
| 1 | .304 | | | H/B | BOE/AP | -18.000 |
| 2 | .520 | | | ELEV ₀ | | |
| 3 | .663 | | | | | |
| 4 | .873 | | | | | |

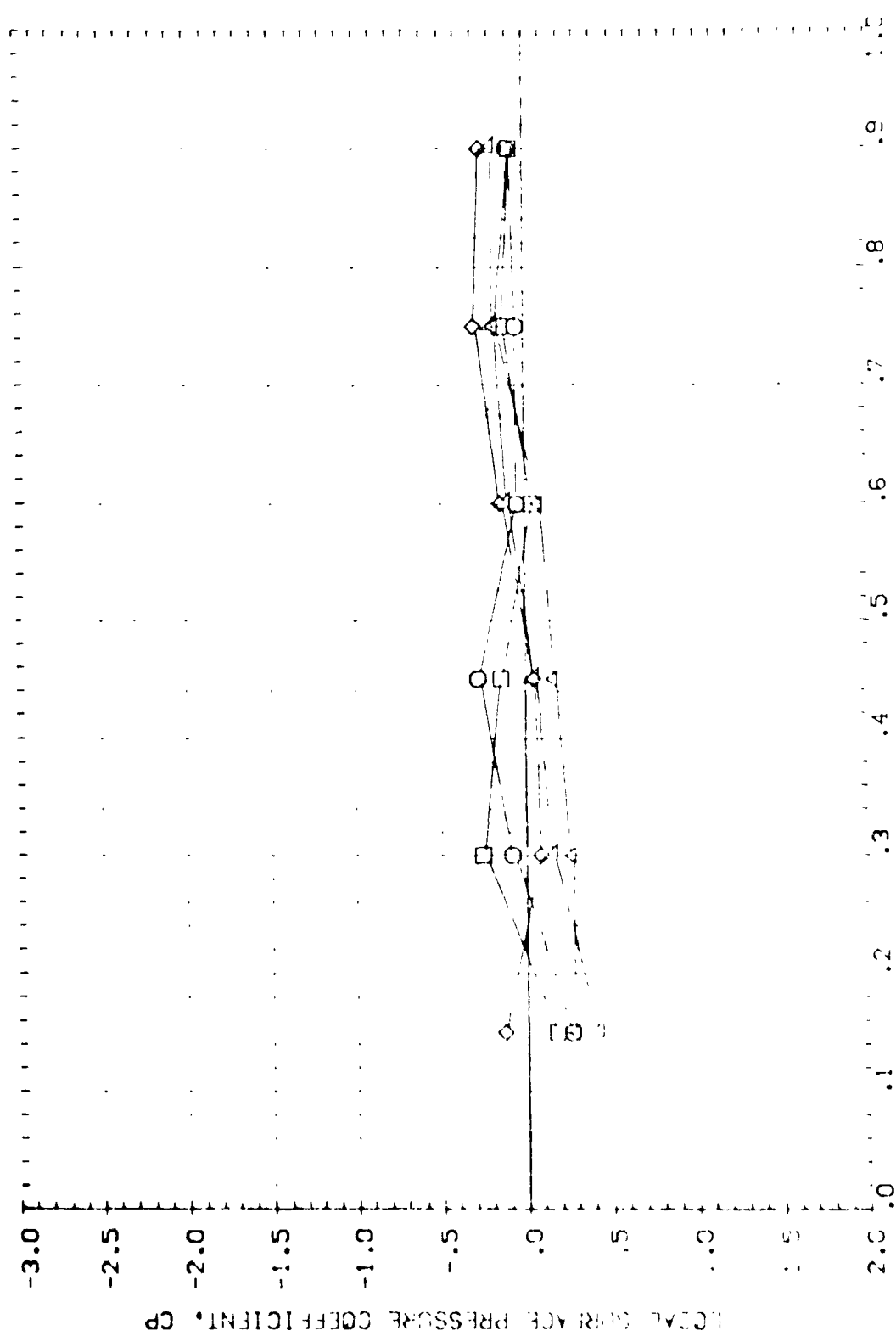


FIG 77 WING LOWER SURFACE PRESSURE COEFFICIENTS WITH $\alpha = 1.5^\circ$, $M = 0.165$
 P-38 318

CA57-B 31605F1 J40 W87E18 WING LOWER SURFACE (RDVL33)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> | <p> α β γ δ ϵ ζ η θ ι κ λ μ ν ξ \omicron π ρ σ τ υ ϕ χ ψ ω </p> |
|---|---|---|---|---|---|---|---|---|---|

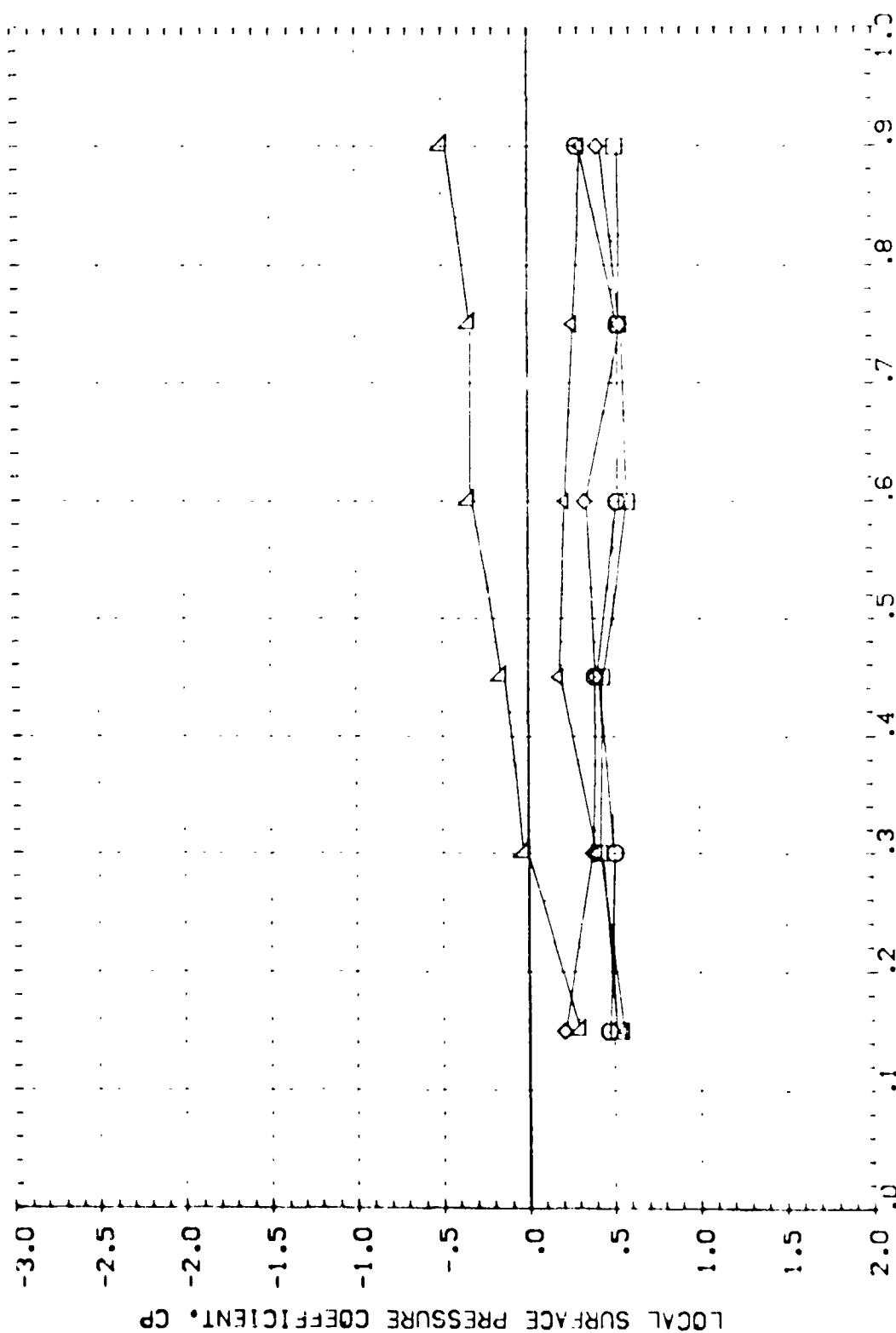


FIG 78 WING LOWER SURFACE PRESSURE COEFFICIENTS AT $\alpha = 0.000, 0.304, 0.500, 0.653, 0.873$

0457-B B160SE: J40 W87E18 WING LOWER SURFACE (RD, -30)

| SYMBOL | ZETA | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|--------|------|-------------------|--------|---------|
| | | | | BETA | PRN/P | BOF/AP |
| ○ | .000 | -.0000 | .165 | B | .000 | 1.00 |
| □ | .334 | | | ELEV | .125 | -18.000 |
| △ | .500 | | | | 15.000 | |
| ◇ | .666 | | | | | |
| ◇ | .833 | | | | | |

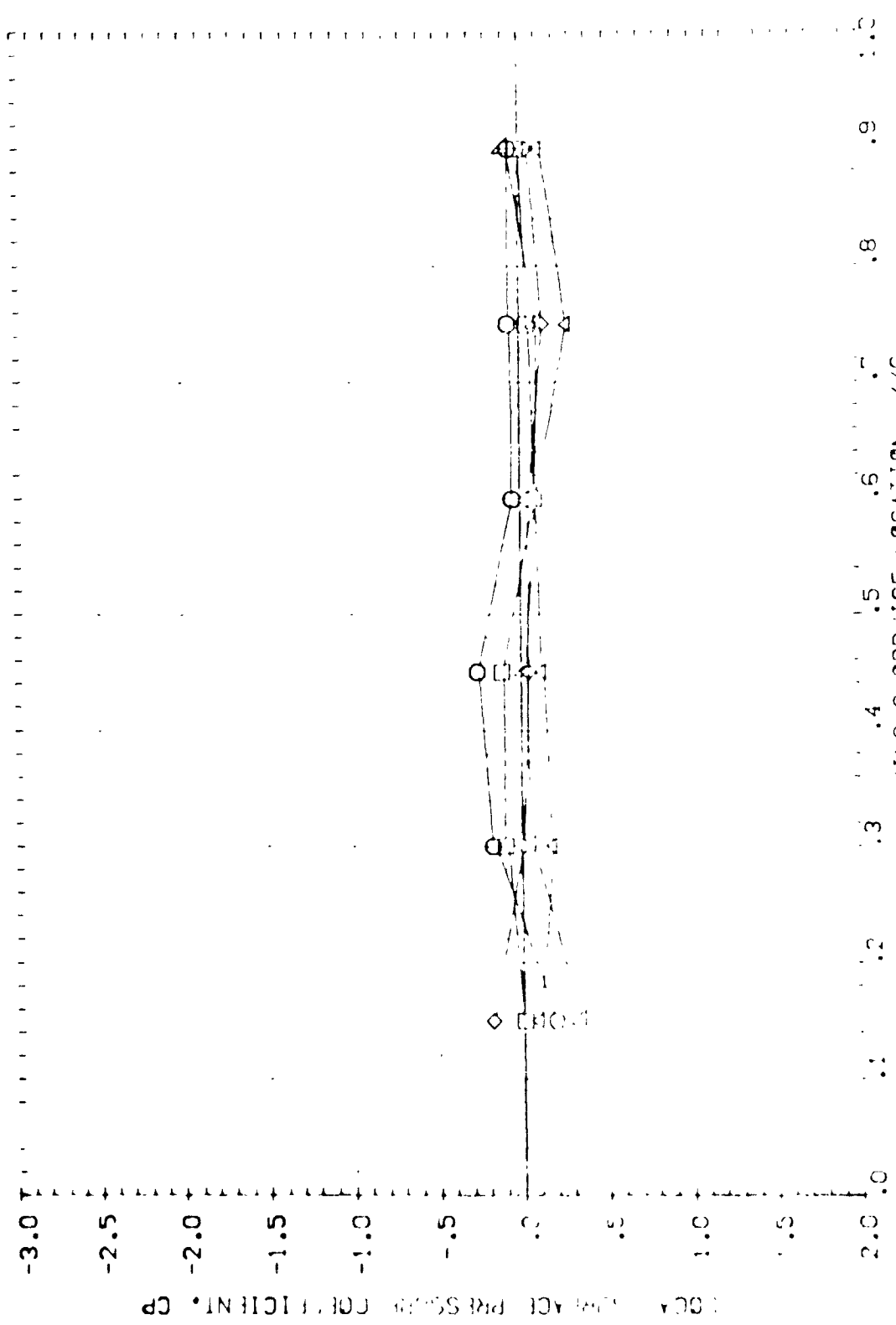


FIG 78 WING LOWER SURFACE PRESSURE COEFFICIENT WITH $\alpha = 4.0^\circ$, $PRN = 0.015$, $BOF/AP = 1.00$



0A5/-B 31605F1 J40 W87E18 WING LOWER SURFACE (RDVL30)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .125 BDFLAP -18.000
 ELE/0 15.000

SYMBOL Z1/B ALPHA MACH
 O .000 9.985 .165
 1 .304
 2 .570
 3 .653
 4 .873

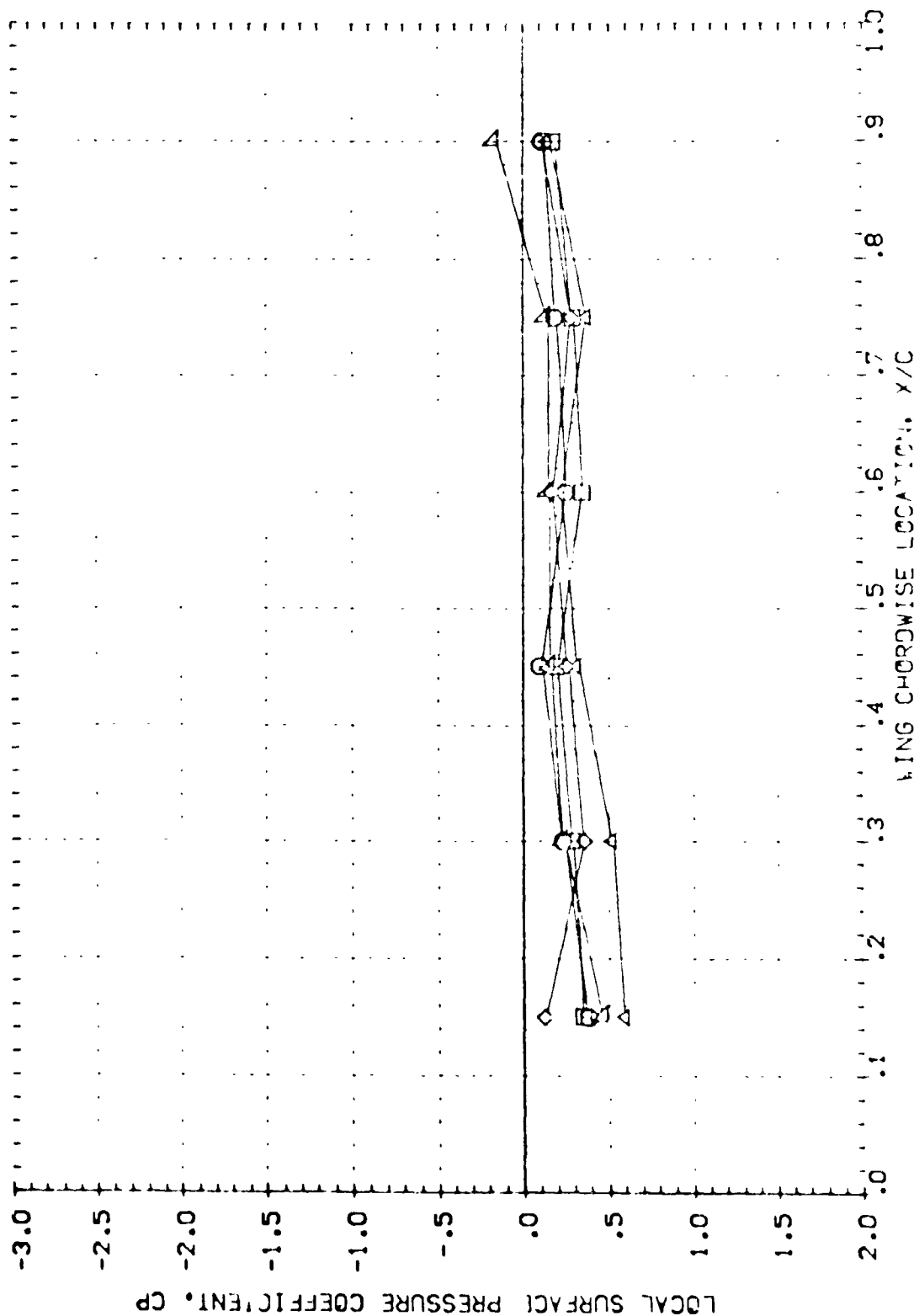


FIG 78 WING LOWER SURFACE PRESSURE COEFFICIENTS WITH J40, PTN/P=1.0, 15 ELEVATION
 PAGE 351

3A57-B 316C5F1 J40 W87E18 WING LOWER SURFACE (RDVL35)

| SYMBOL | Z1/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|--------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | -.020 | .165 | .000 | 1.300 | | |
| □ | .334 | | | .206 | | | |
| △ | .520 | | | | | | |
| ◇ | .663 | | | | | | |
| × | .873 | | | | | | |

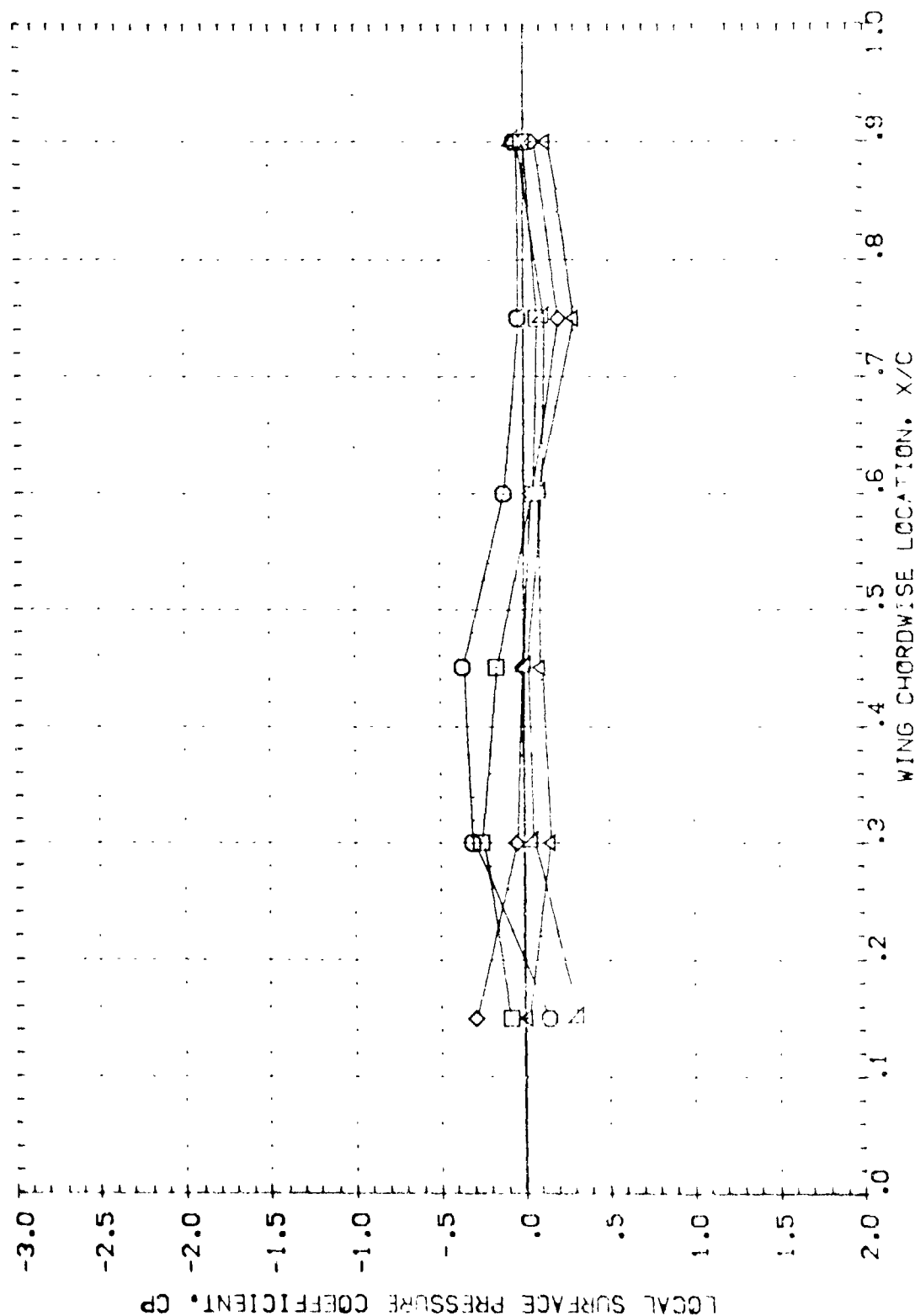


FIG 78 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL35)

| SYMBOL | Z/Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|-------|-------|------|-------------------|-------|--------|---------|
| | | | | BE/A | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | 9.995 | .165 | .000 | .000 | 1.300 | -18.000 |
| ◇ | .334 | | | .206 | | | |
| △ | .500 | | | 15.000 | | | |
| ▽ | .653 | | | | | | |
| ▽ | .873 | | | | | | |

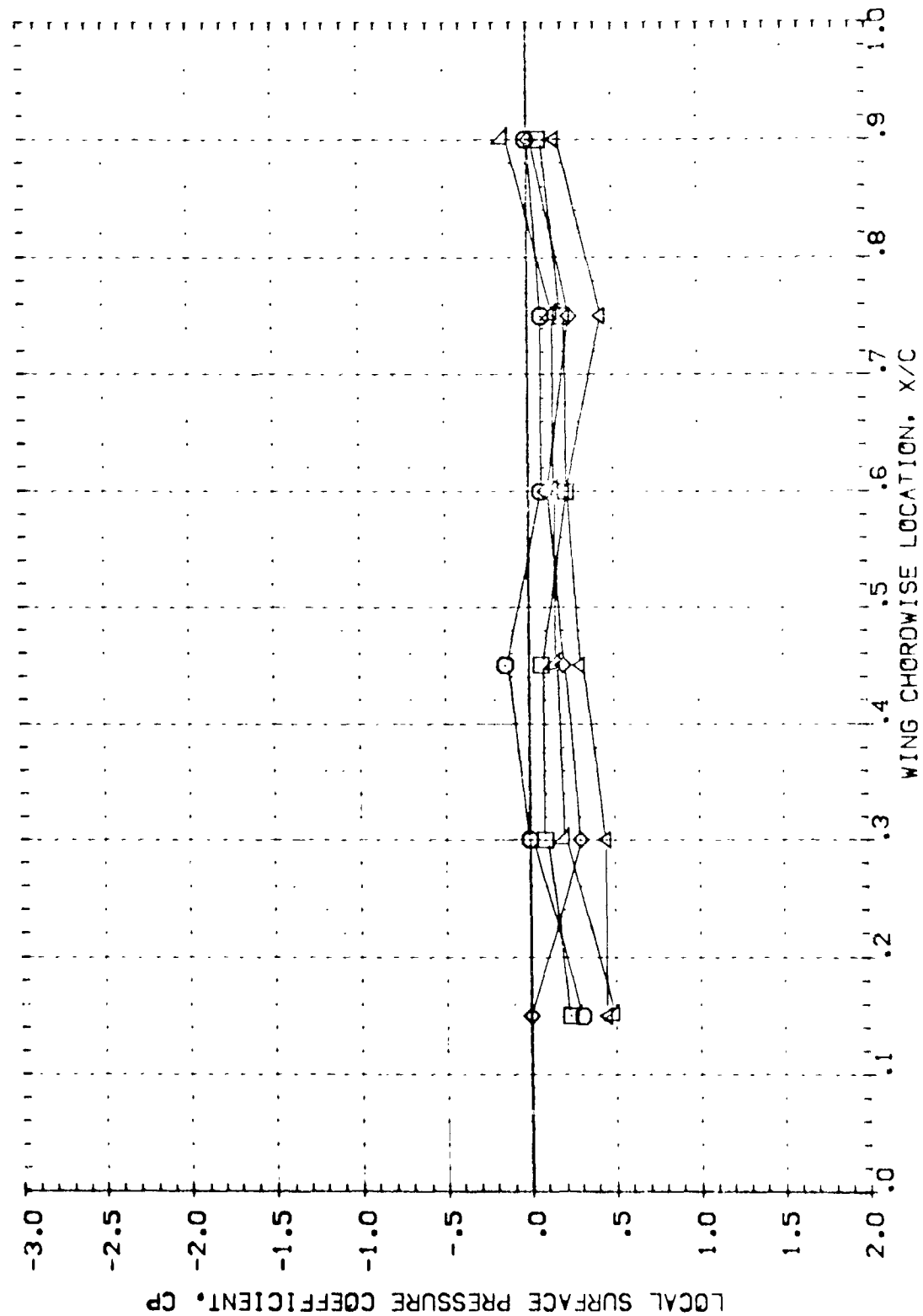


FIG 78 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.0, 15 ELEVON

0457-B 816C5F1 J40 W87E18 WING LOWER SURFACE (RDVL32)

| SYMBOL | Z/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|--------|--------|--|
| | | | | BETA | PTN/P | ELEVON | |
| ○ | .000 | 9.990 | .165 | H/B | BOFLAP | | |
| ○ | .304 | | | 15.000 | 1.300 | | |
| ○ | .500 | | | | 18.000 | | |
| ○ | .663 | | | | | | |
| ○ | .873 | | | | | | |

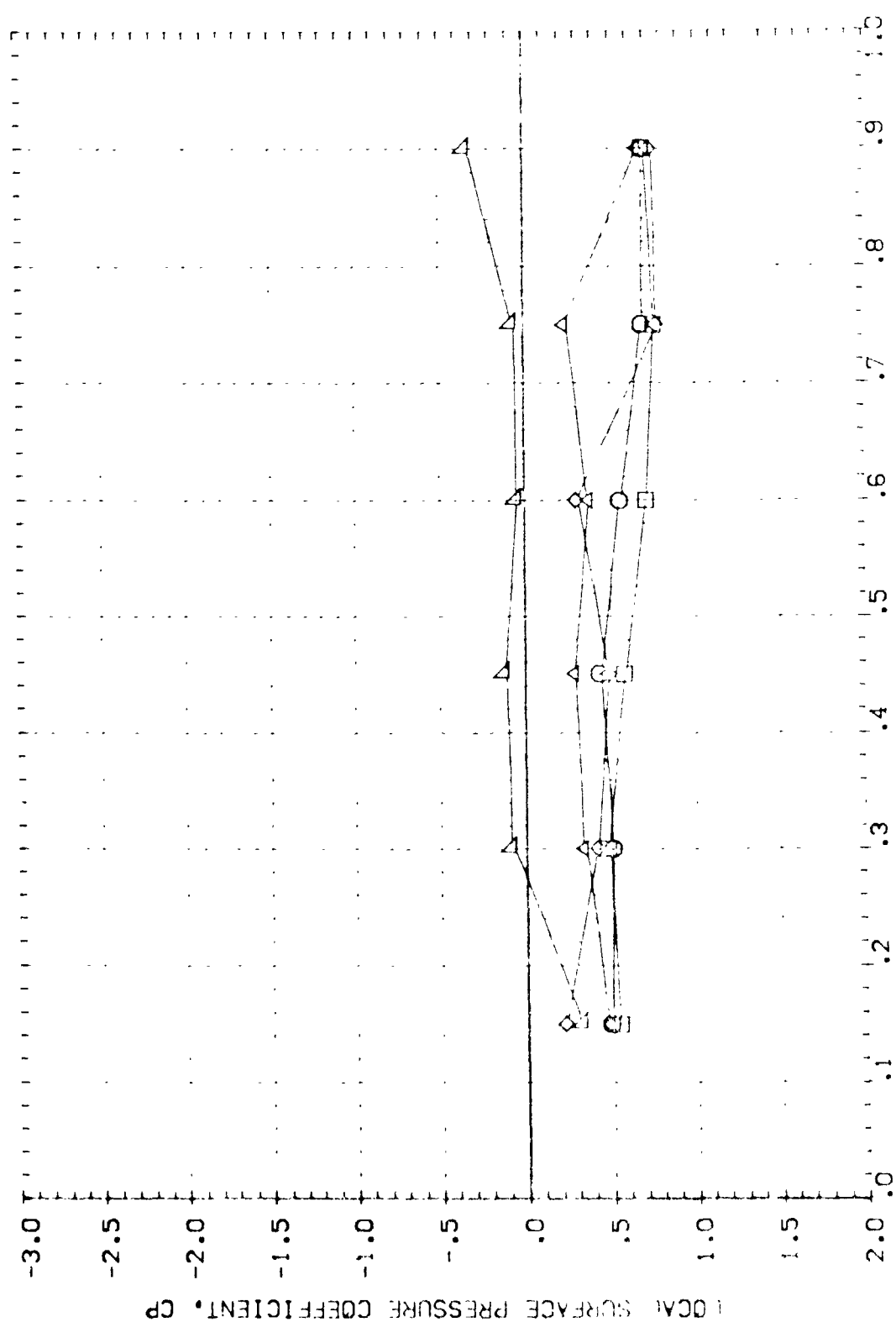


FIG 79 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 1.5 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL29)

| SYMBOL | Z/Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|-------|-------|------|-------------------|-------|--------|---------|
| | | | | BETA H/B | PTN/P | BDF/AP | ELEVON |
| ○ | .000 | -.000 | .165 | | .000 | | 1.300 |
| ◇ | .334 | | | | .125 | | -18.000 |
| △ | .520 | | | | | | |
| □ | .663 | | | | | | |
| × | .873 | | | | | | |

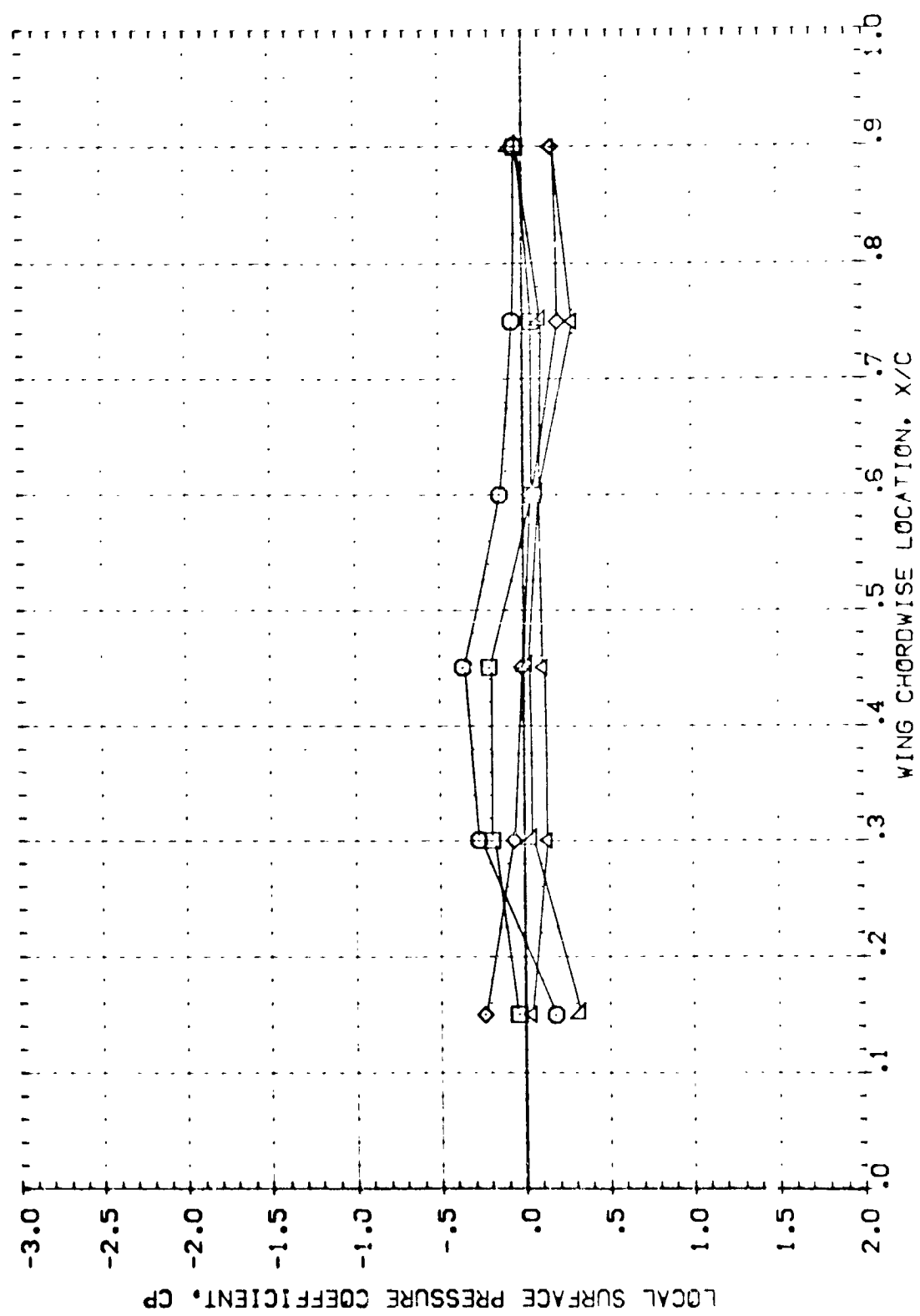


FIG 79 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, .5 ELEVON

0A57-B 916C5F1 J40 W87E18 WING LOWER SURFACE (RDVL29)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|--------------------|---------|
| | | | | BETA H/B | P ¹ N/P | BOFLAP |
| 0 | .000 | 9.965 | .185 | 15.000 | .000 | 1.300 |
| 1 | .334 | | | | .125 | -18.000 |
| 2 | .500 | | | | | |
| 3 | .633 | | | | | |
| 4 | .873 | | | | | |

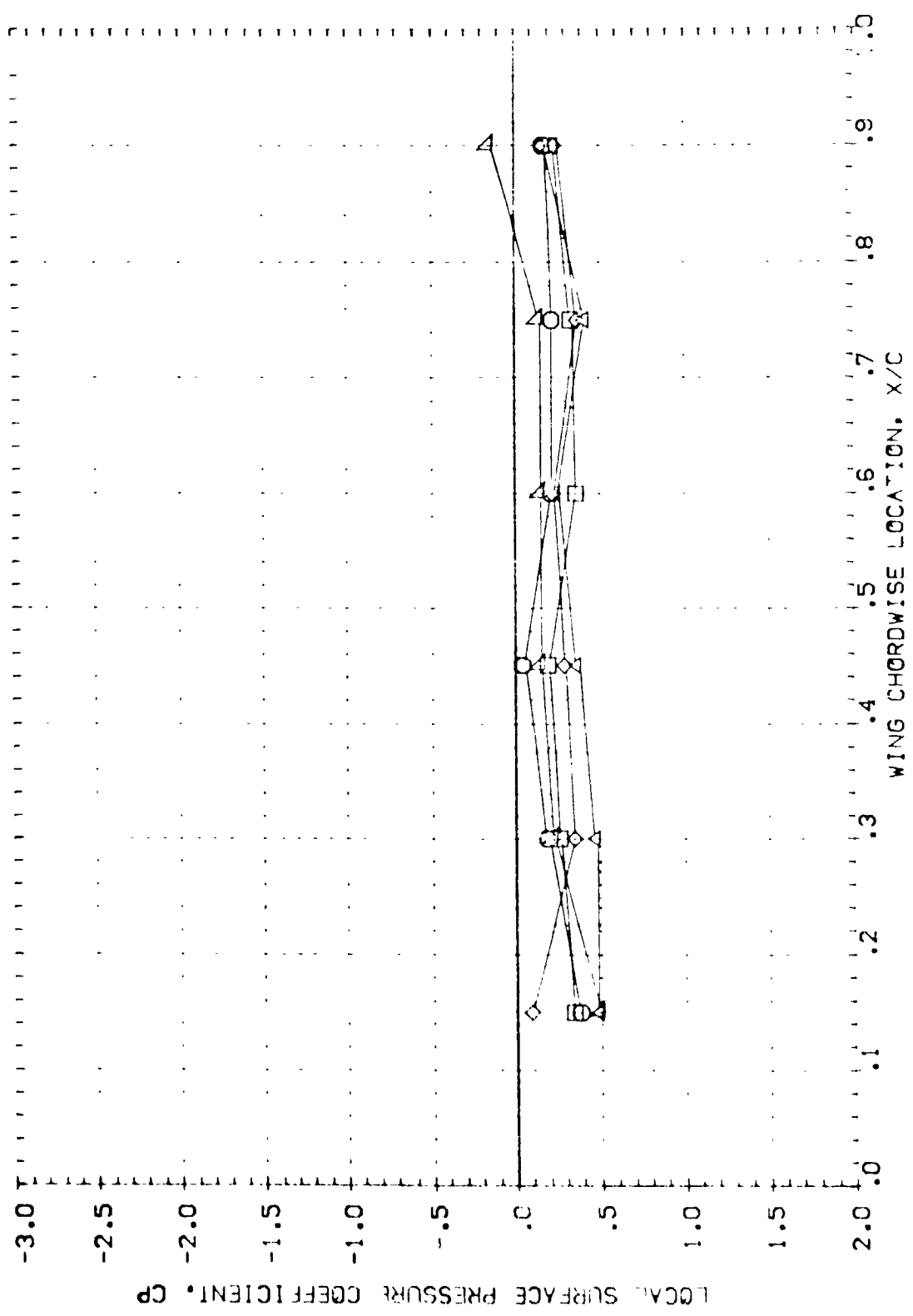


FIG 79 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, P¹N/P=1.3, 1.5 ELEV

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (ROVL35)

| SYMBOL | 2X/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|------------------|
| | | | | BETA H/B | PTN/P | BOFLAP | 1.300 -18.000 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| ○ | .000 | -.020 | .165 | 15.000 | | | |
| ◇ | .334 | | | | | | |
| △ | .520 | | | | | | |
| □ | .663 | | | | | | |
| × | .873 | | | | | | |

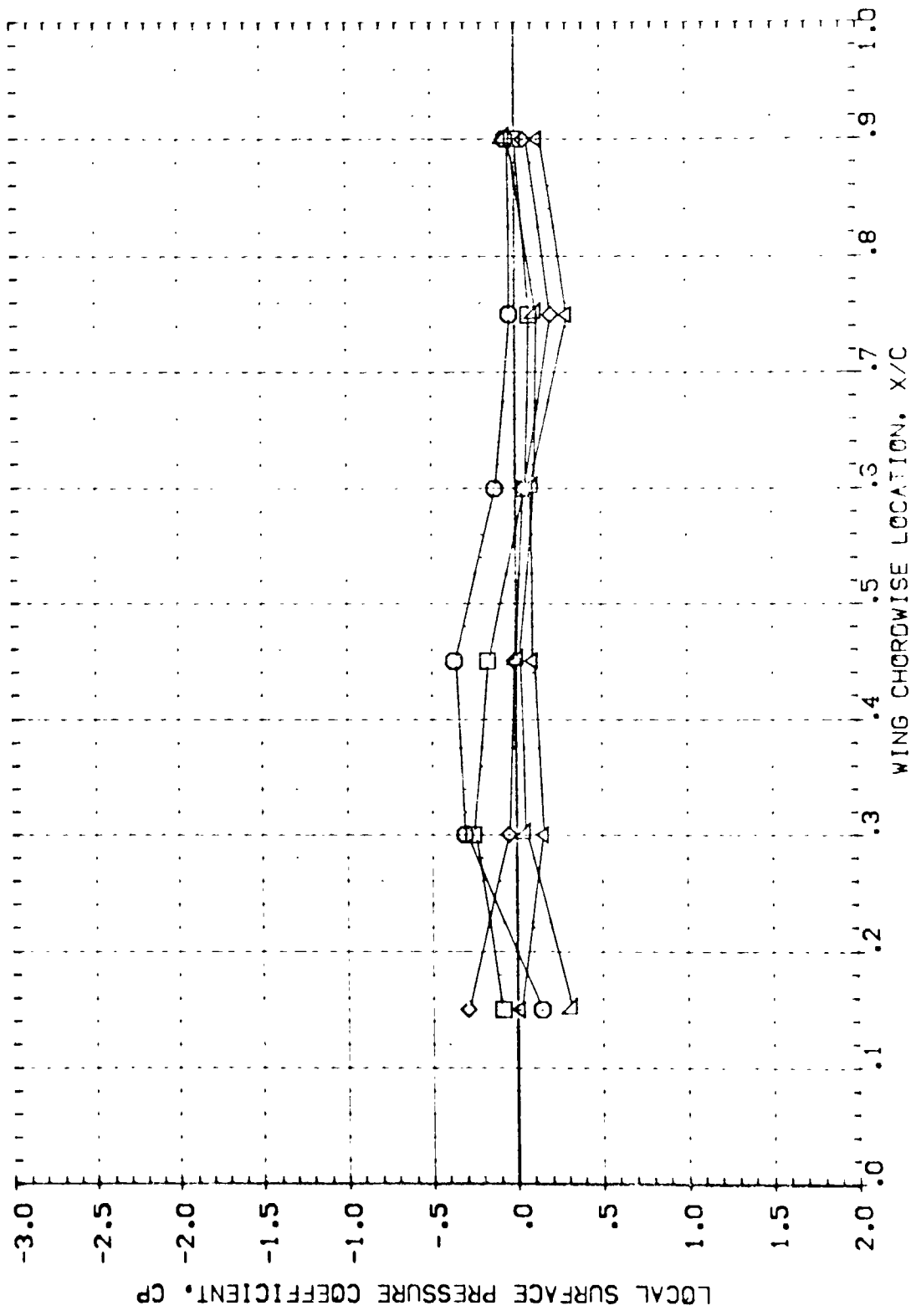


FIG 79 WING LOWER SURFACE PRESSURE COEFFICIENTS WITH J40, PTN/P=1.3, 15 DEGREE

0A57-B 91605F1 J40 W87E18 WING LOWER SURFACE (RD/L35)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .206 BOF_LAP -18.000
 ELEVON 15.000

SYMBOL 2N/B ALPHA MACH
 .000 9.985 .165
 .334
 .570
 .622
 .673

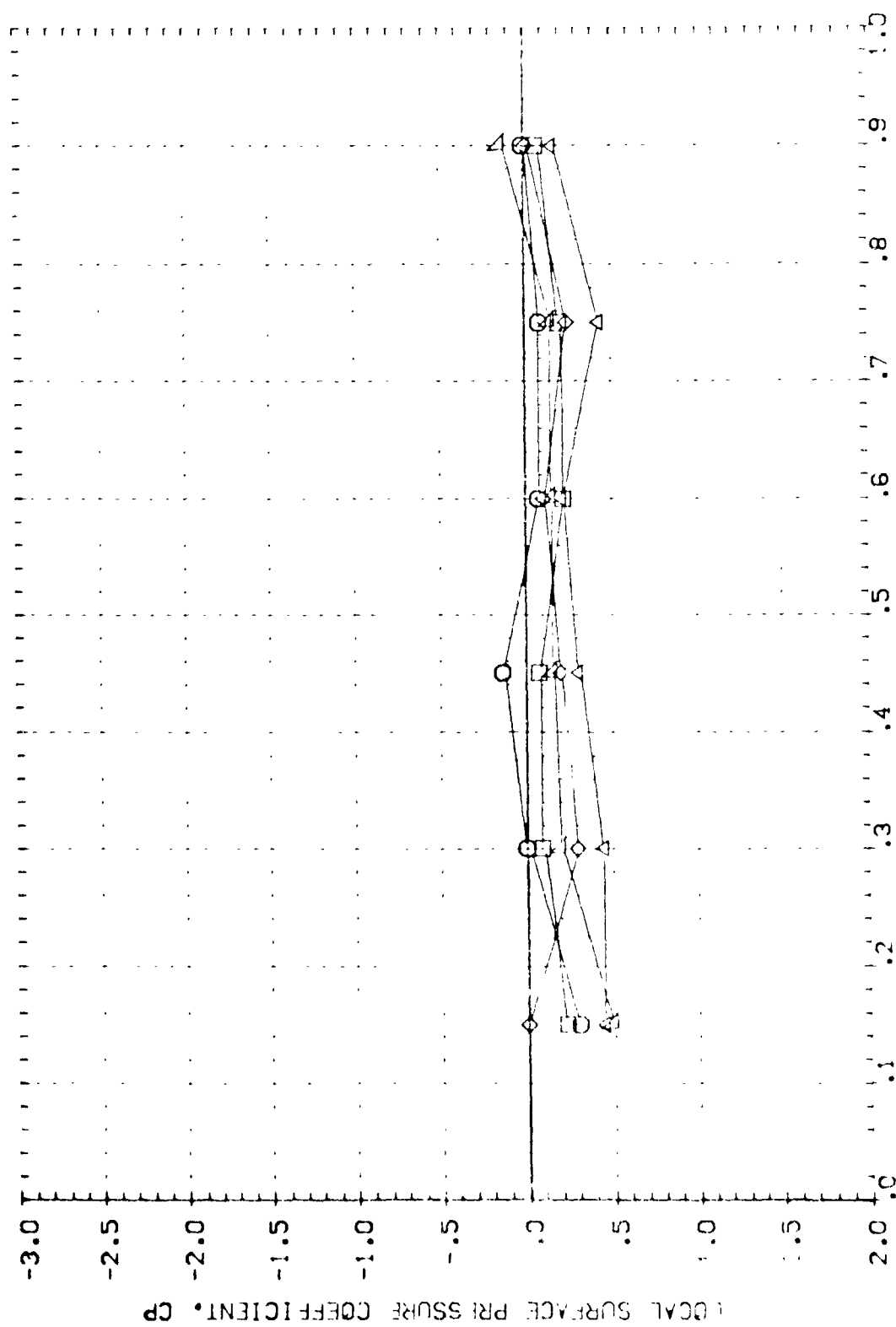


FIG 79 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, .5 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL31)

PARAMETRIC VALUES
 BETA PTN/P 1.500
 H/B BOFLAP -18.000
 ELEVON 15.000

SYMBOL 2Y/B ALPHA MACH
 1.000 10.010 .165
 1.334
 1.520
 1.663
 1.873

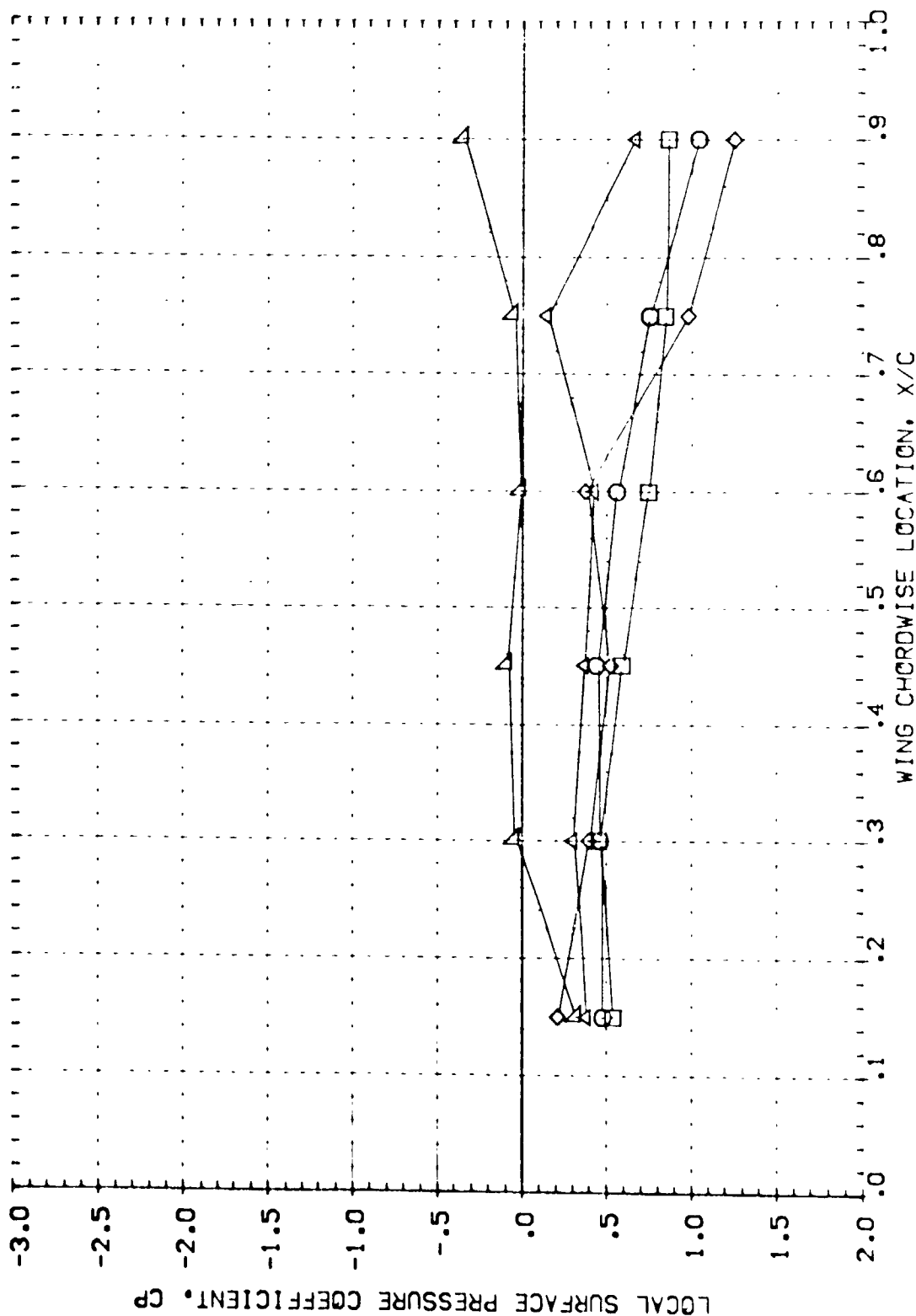


FIG 80 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0457-B B1605F: J40 W87E18 WING LOWER SURFACE (RD: 79)

| | | | | | |
|--------|------|-------|------|--------|-------------------|
| SYMBOL | 2N/B | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | -.020 | .165 | W/B | .000 |
| □ | .304 | | | ELEVON | .125 |
| △ | .500 | | | | .15000 |
| ◇ | .663 | | | | 1.500 |
| ◇ | .872 | | | | -18.000 |

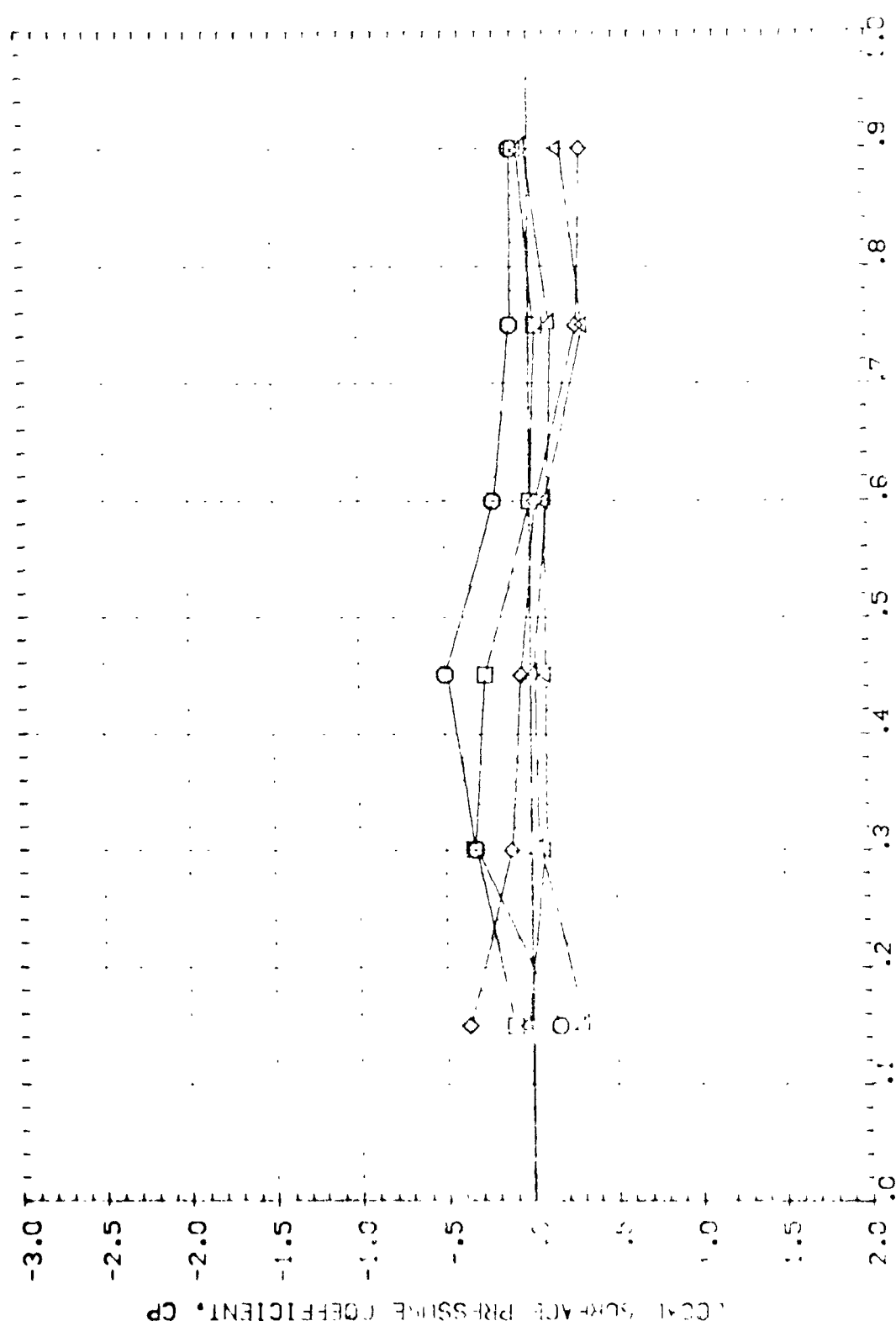


FIG 80 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, 2N/B = 0.000, 0.304, 0.500, 0.663, 0.872
PAGE 310

0A57-B B16C5F1 J4C W87E18 WING LOWER SURFACE (RDVL28)

| SYMBO | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|-------|------|-------|------|-------------------|--------|---------|
| | | | | BETA | PTN/P | 1.500 |
| ○ | .000 | 9.965 | .165 | H/B | BD/LAP | -18.000 |
| ◇ | .334 | | | ELEVON | | 15.000 |
| △ | .520 | | | | | |
| □ | .663 | | | | | |
| × | .873 | | | | | |

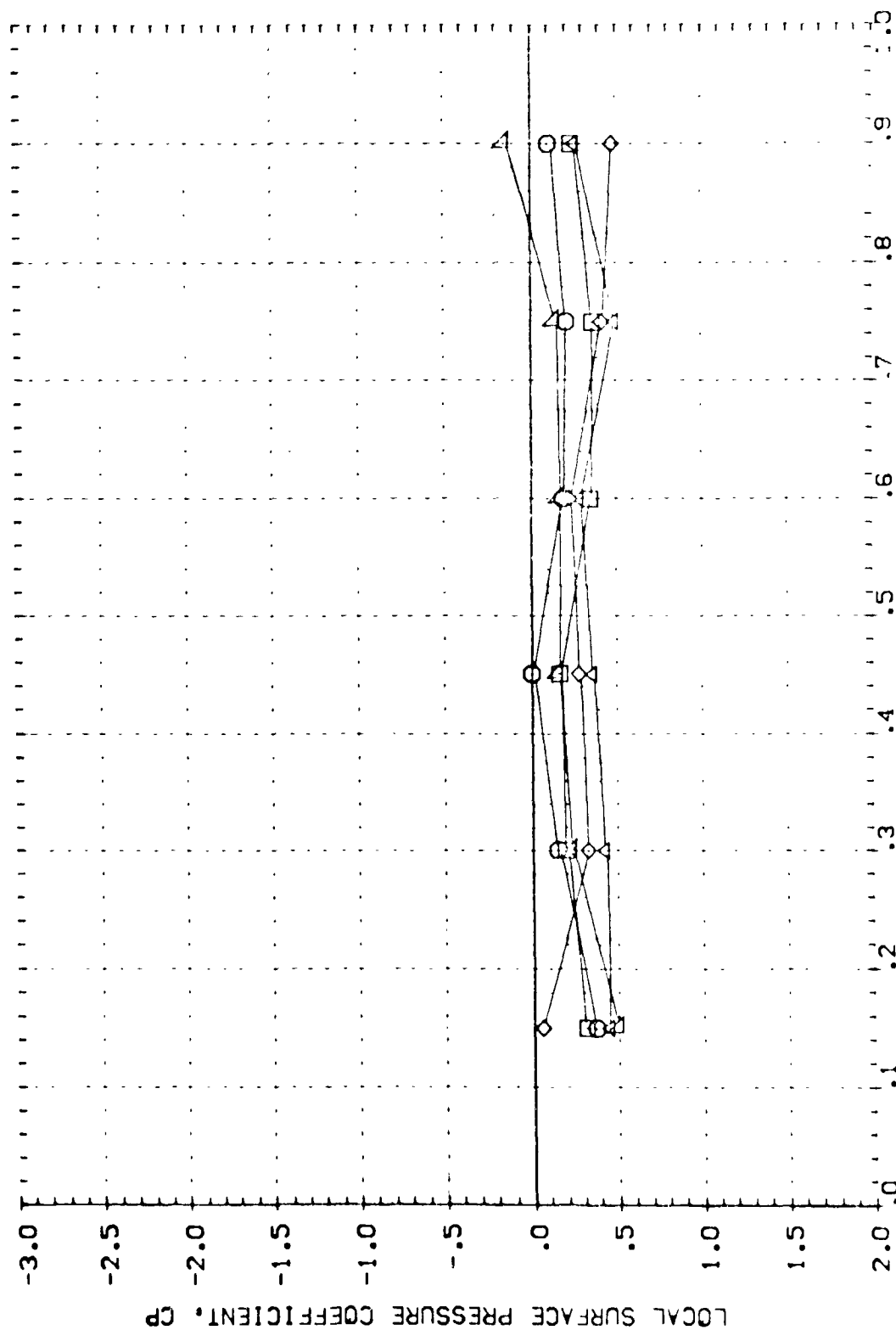


FIG 80 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH 140, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING LOWER SURFACE (RDVL34)

| | | | | | | |
|--------|------|-------|------|-------------------|--------|---------|
| SYMBOL | 21/8 | ALPHA | MACH | PARAMETRIC VALUES | | |
| | .000 | -.010 | .165 | BETA | .000 | PTN/P |
| | .304 | | | H/B | .286 | BD/FLAP |
| | .520 | | | ELEVON | 15.000 | -18.000 |
| | .673 | | | | | |

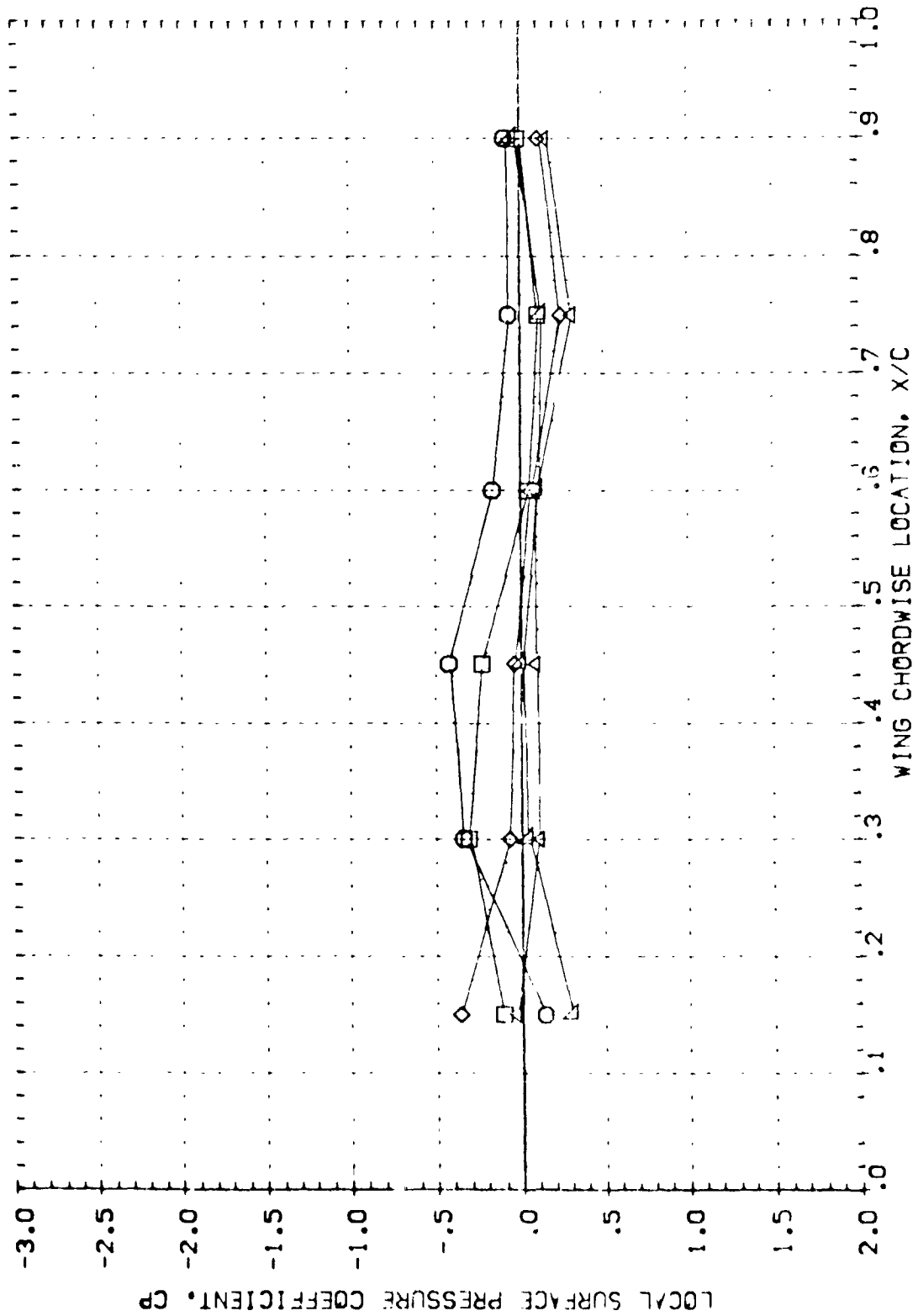


FIG 80 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0457-3 31605F1 J40 W87E18 WING LOWER SURFACE (RDVL34)

| | | | | | |
|--------|------|-------|------|--------|-------------------|
| SYMBOL | 21/8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | 9.995 | .165 | M.B | .000 PTV/P |
| ◇ | .304 | | | ELEVON | .706 BOFLAP |
| △ | .500 | | | | 15.000 |
| □ | .663 | | | | |
| + | .873 | | | | |

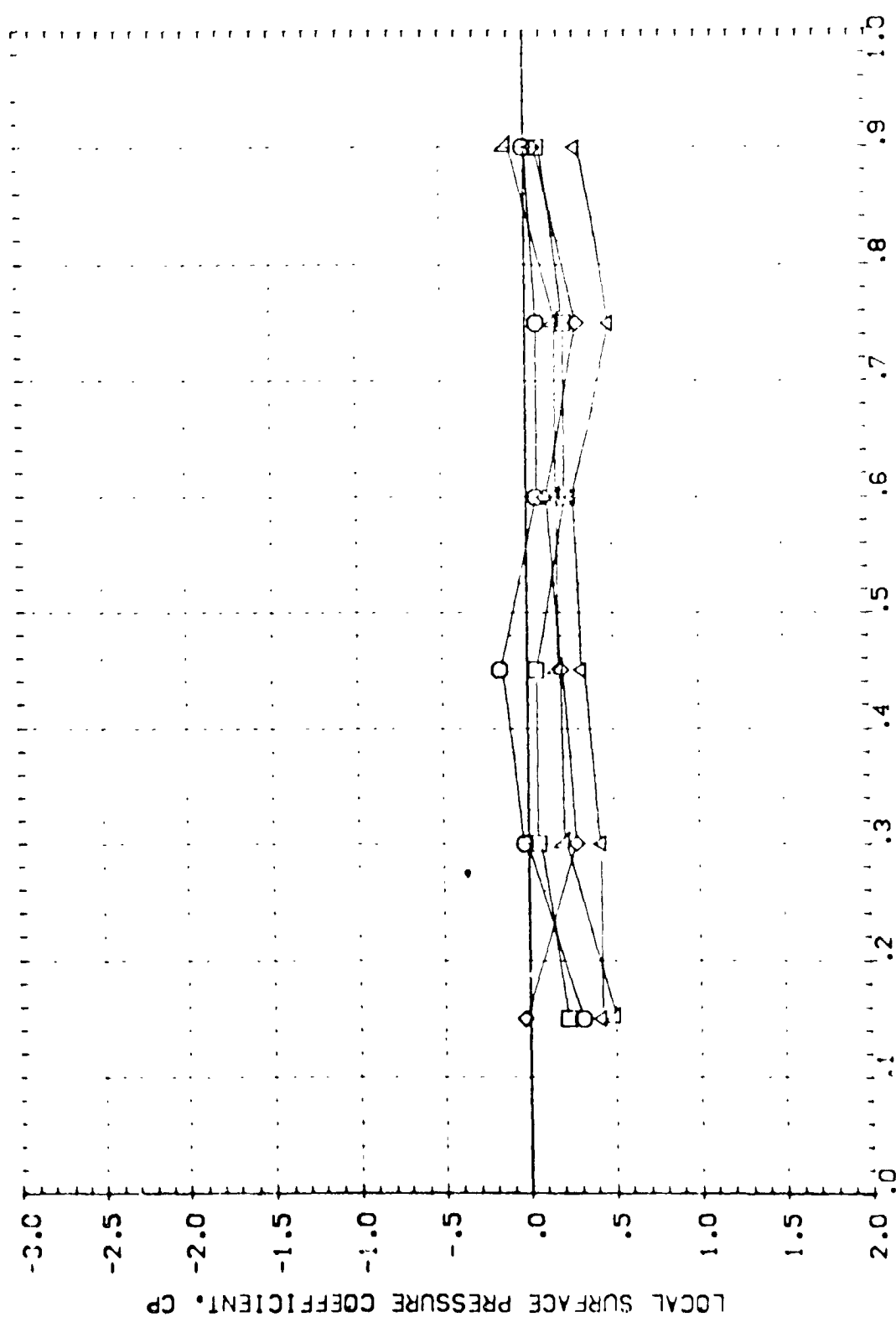


FIG 80 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J40, PTV/P=1.5, 1.5 ELEVON

CASE-8 3:605F: J41 W87E18 WING LOWER SURFACE (RD-56)

PARAMETRIC VALUES
 BETA .000 PITCH 1.000
 M 9 .039 SUFFIX -18.000
 ELEVON .000

SYMBOL 27/8 ALPHA WAO
 O .000 10.1° .65
 .304
 .520
 .663
 .873

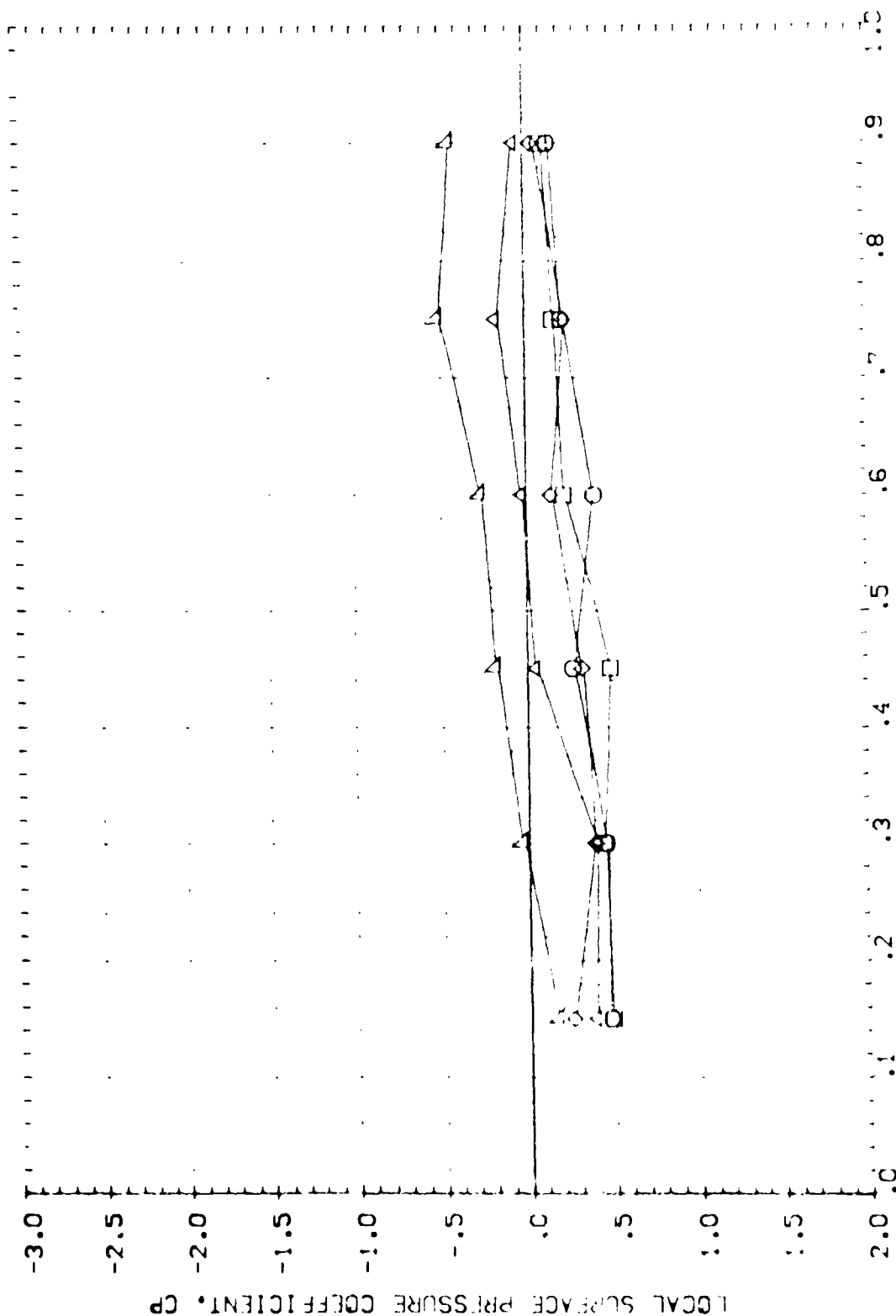


FIG 81 WING LOWER SURFACE PRESSURE COEFFICIENTS DIST WITH 10.1° PITCH, PITCH 1.0, 0 ELEVON

0457-B 816CSE1 J41 W87E18 WING LOWER SURFACE (RDVL58)

| | | | | | | | |
|--------|------|-------|------|-------------------|--------------------|----------|--|
| SYMBOL | 27/8 | ALPHA | MACH | PARAMETRIC VALUES | | | |
| 0 | .000 | -.005 | .165 | BETA | P _{TN} /P | 1.000 | |
| 1 | .304 | | | HUB | BOFLAP | -.18.000 | |
| 2 | .520 | | | ELEVON | | | |
| 3 | .663 | | | | | | |
| 4 | .673 | | | | | | |

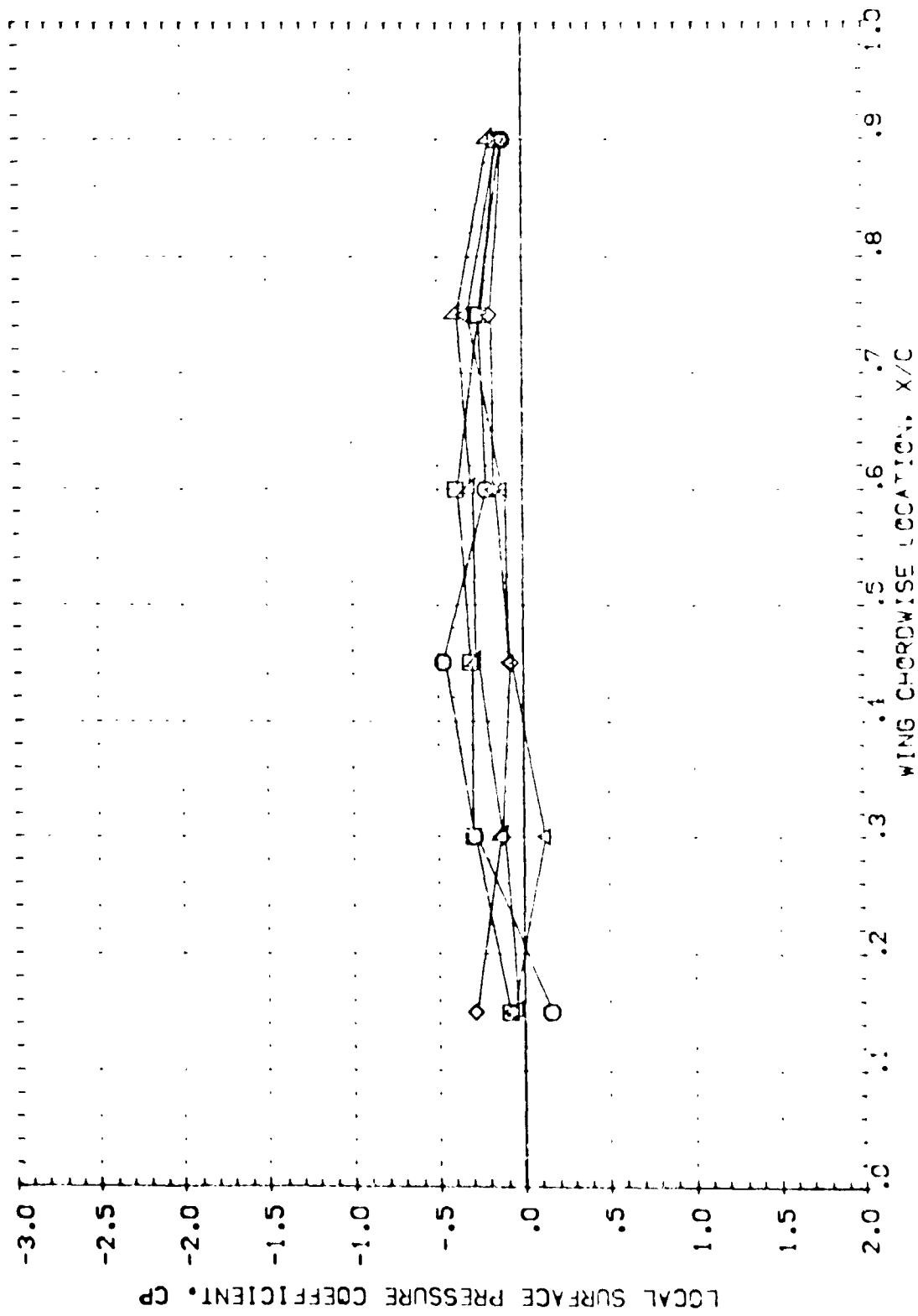


FIG 8: WING LOWER SURFACE PRESSURE COEFFICIENTS WITH α , $P_{TN}/P=1.0$, $\theta=0$ DEGREE
PAGE 375

0457-3 B:6C5F1 J41 W87E18 WING LOWER SURFACE (RDVL53)

| | | | | | | |
|--------|---------------|-------|------|-------------------|--------|---------|
| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | |
| ○ | .000 | -.005 | .165 | BETA | PTN/P | 1.000 |
| ◇ | .334 | | | H/B | BOFLAP | -18.000 |
| △ | .520 | | | ELEVON | | |
| □ | .663 | | | | | |
| ▽ | .873 | | | | | |

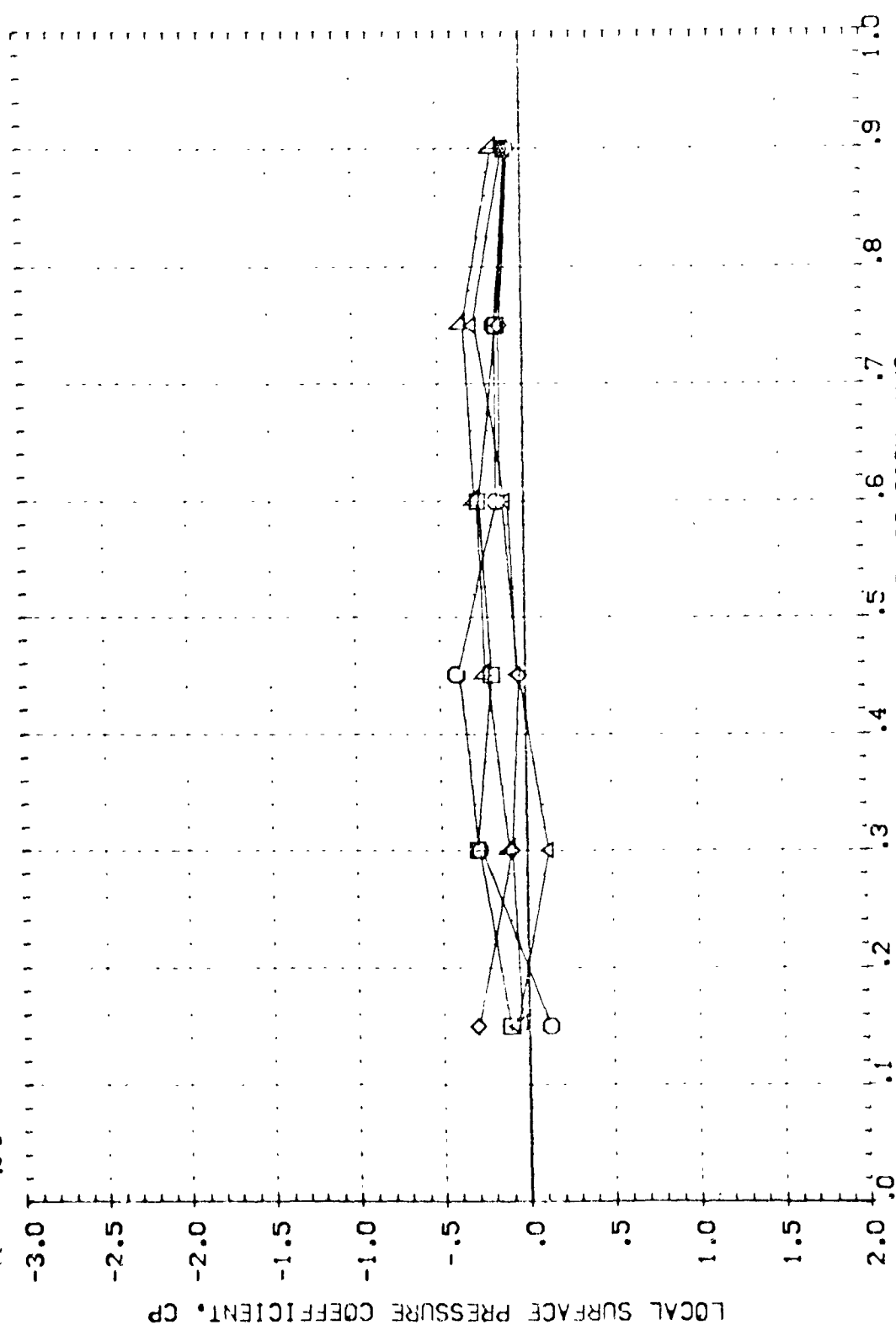


FIG 81 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING LOWER SURFACE (RDVL53)

| SYMBOL | Z1/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-----------------|------------------|
| | | | | BETA H/B | PTN/P BOFLAP | 1.000 -18.000 |
| | .000 | 9.980 | .165 | | | |
| | .334 | | | | | |
| | .520 | | | | | |
| | .653 | | | | | |
| | .873 | | | | | |

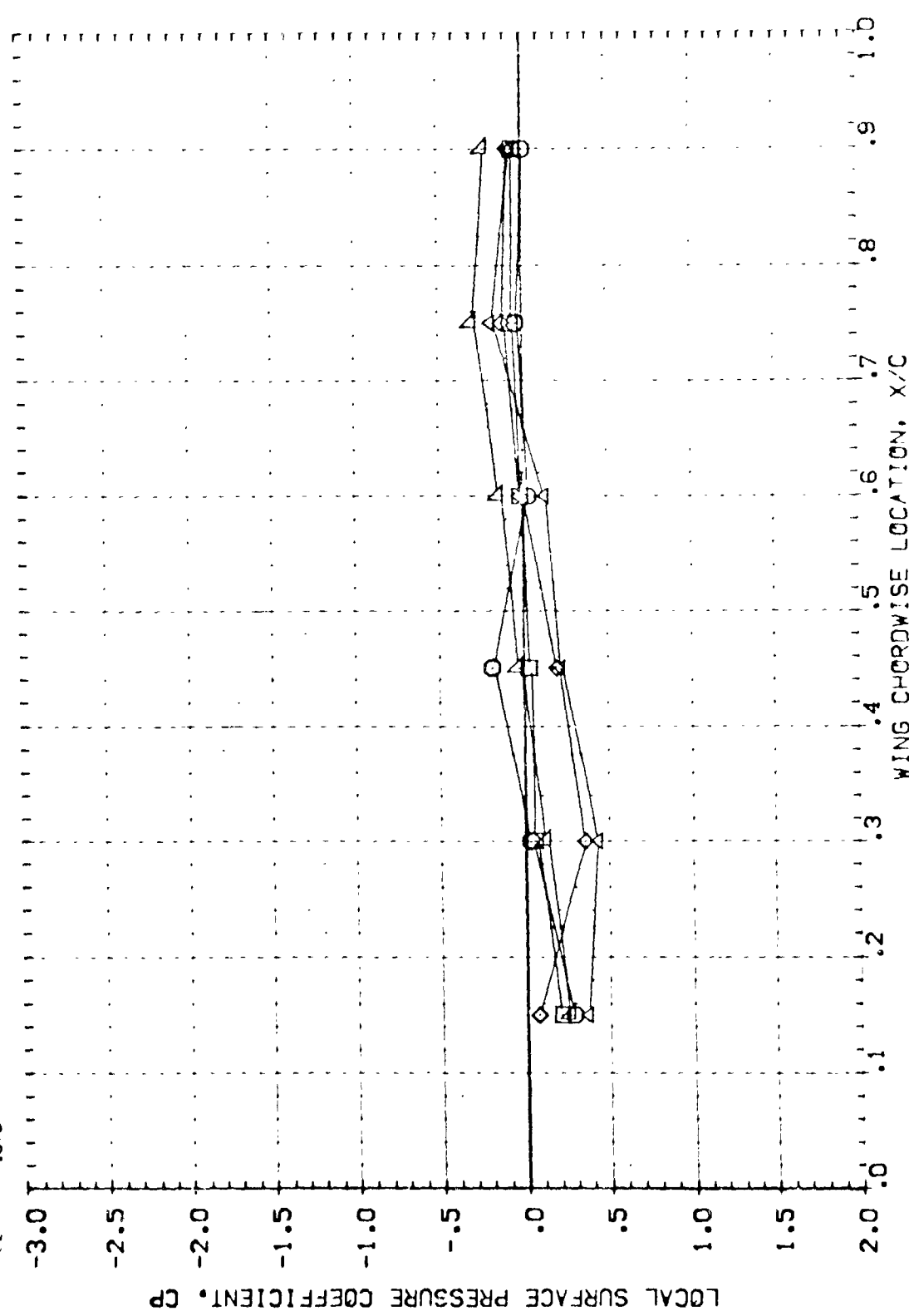


FIG 81 WING LOWER SURFACE PRESSURE CHORDWISE DIST. J41, PTN/P=1.0, 0 ELEVON

0A57-8 B16CSF1 J41 W87E18 WING LOWER SURFACE (RDVL55)

PARAMETRIC VALUES
 .000 PTN/P 1.300
 .039 BOFLAP -18.000
 .000

BETA
 H/B
 ELEVON

ALPHA
 9.990
 .165

SYMBOL
 2N/B
 .000
 .304
 .570
 .653
 .873

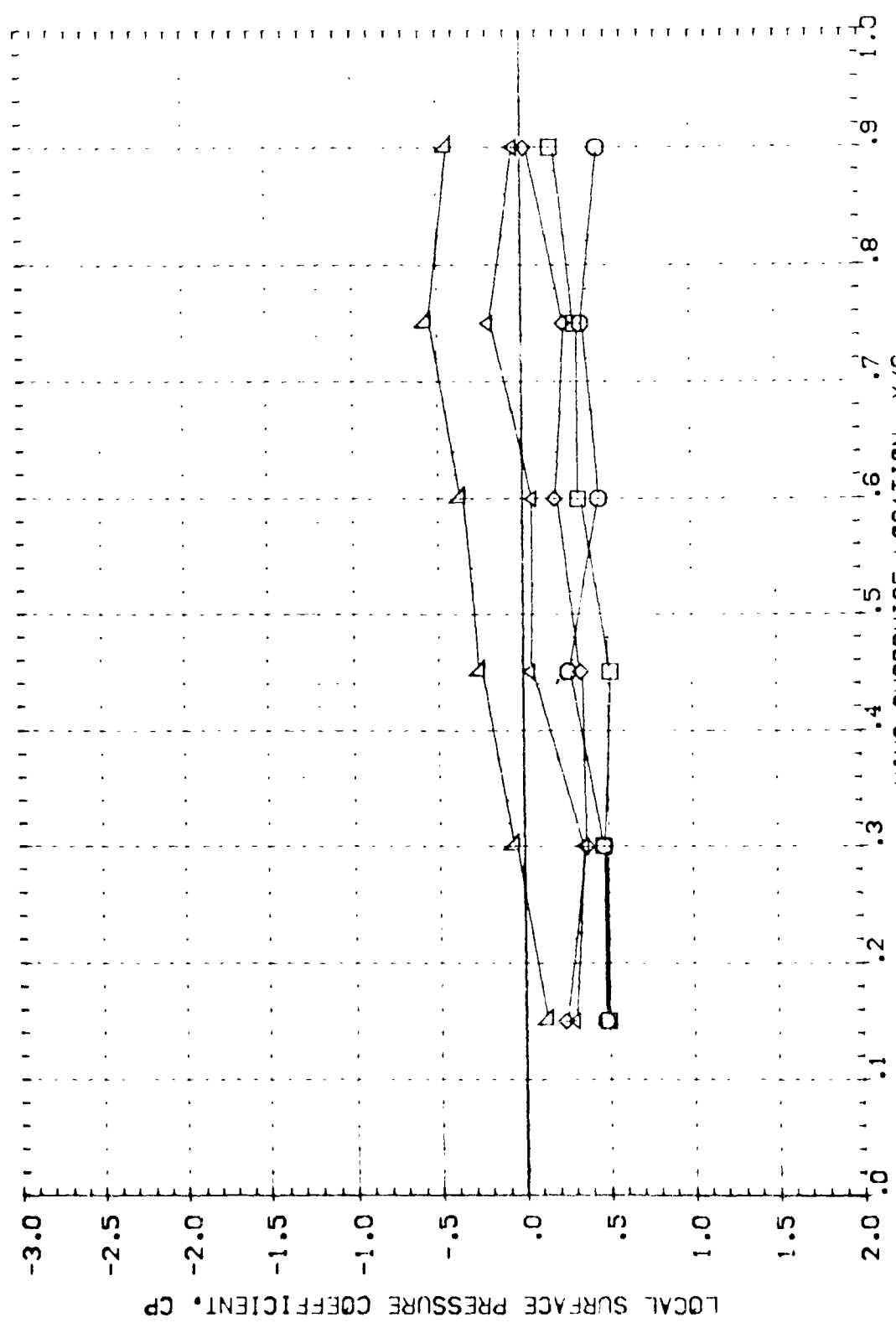


FIG 82 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING LOWER SURFACE (RDVL57)

| SYMBOL | 2Y/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-----------------|------------------|
| | | | | BETA H/B | PTN/P BOFLAP | 1.300 -18.000 |
| ○ | .000 | -.005 | .165 | .000 | .000 | |
| ◇ | .304 | | | .125 | | |
| △ | .520 | | | .000 | | |
| □ | .663 | | | | | |
| ○ | .873 | | | | | |

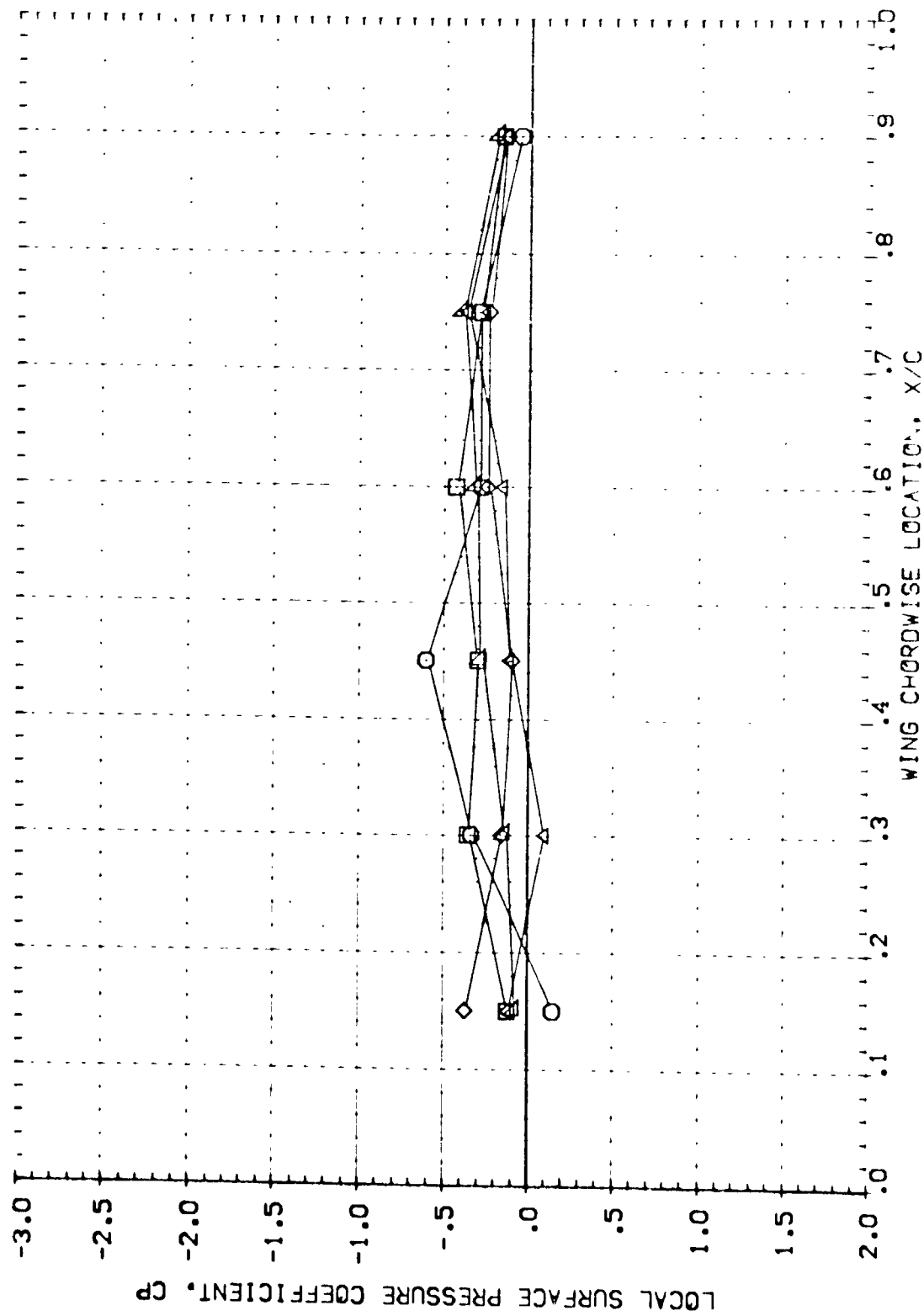


FIG 82 WING LOWER SURFACE PRESSURE COEFFICIENT WITH 241, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J41 W87E18 WING LOWER SURFACE (RDVL57)

| | | | | | |
|--------|------|-------|------|--------|-------------------|
| SYMBOL | 21/8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | 9.995 | .165 | H/B | PTN/P |
| ◇ | .334 | | | ELEVON | 80FLAP |
| △ | .520 | | | | |
| □ | .663 | | | | |
| × | .873 | | | | |

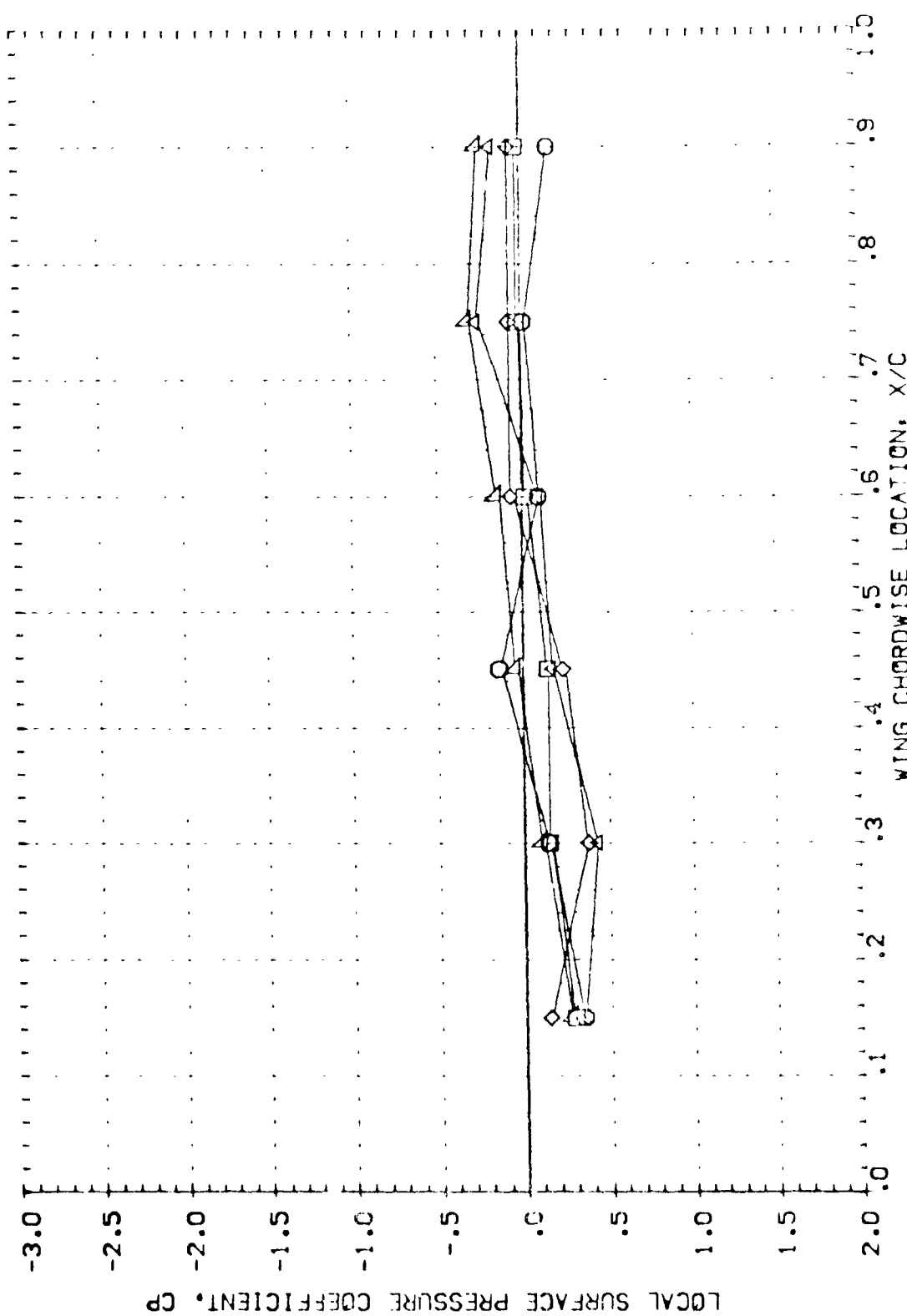


FIG 82 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J41 W87E18 WING LOWER SURFACE (RDVL52)

| SYMBOL | 2X/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-----------------|------------------|
| | | | | BETA H/B | PTN/P BOFLAP | 1.300 -18.000 |
| 1 | .000 | -.005 | .165 | .000 | .000 | |
| 2 | .334 | | | .286 | | |
| 3 | .520 | | | | | |
| 4 | .653 | | | | | |
| 5 | .873 | | | | | |

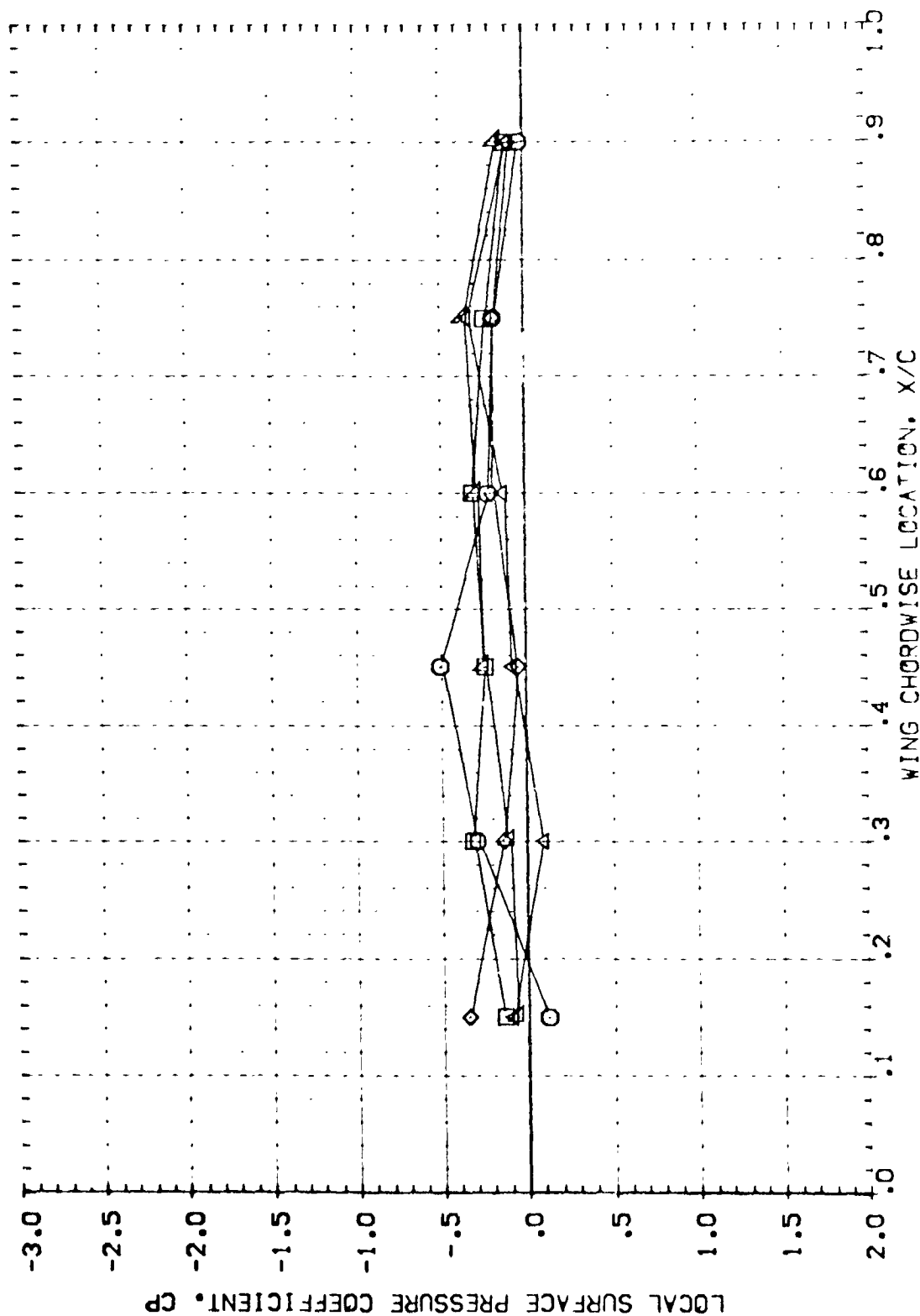


FIG 82 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEV.

0A57-B B16C5F1 J41 W87E18 WING LOWER SURFACE (RDVL52)

| | | | | | | | |
|-------|-------|-------|------|-------------------|--------|---------|--|
| TIME | 27/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
| 0.000 | 0.000 | 9.990 | .185 | BETA | PTN/P | 1.300 | |
| .304 | .000 | | | H/B | BDFLAP | -18.000 | |
| .520 | .286 | | | ELEVON | | | |
| .663 | .000 | | | | | | |
| .873 | | | | | | | |

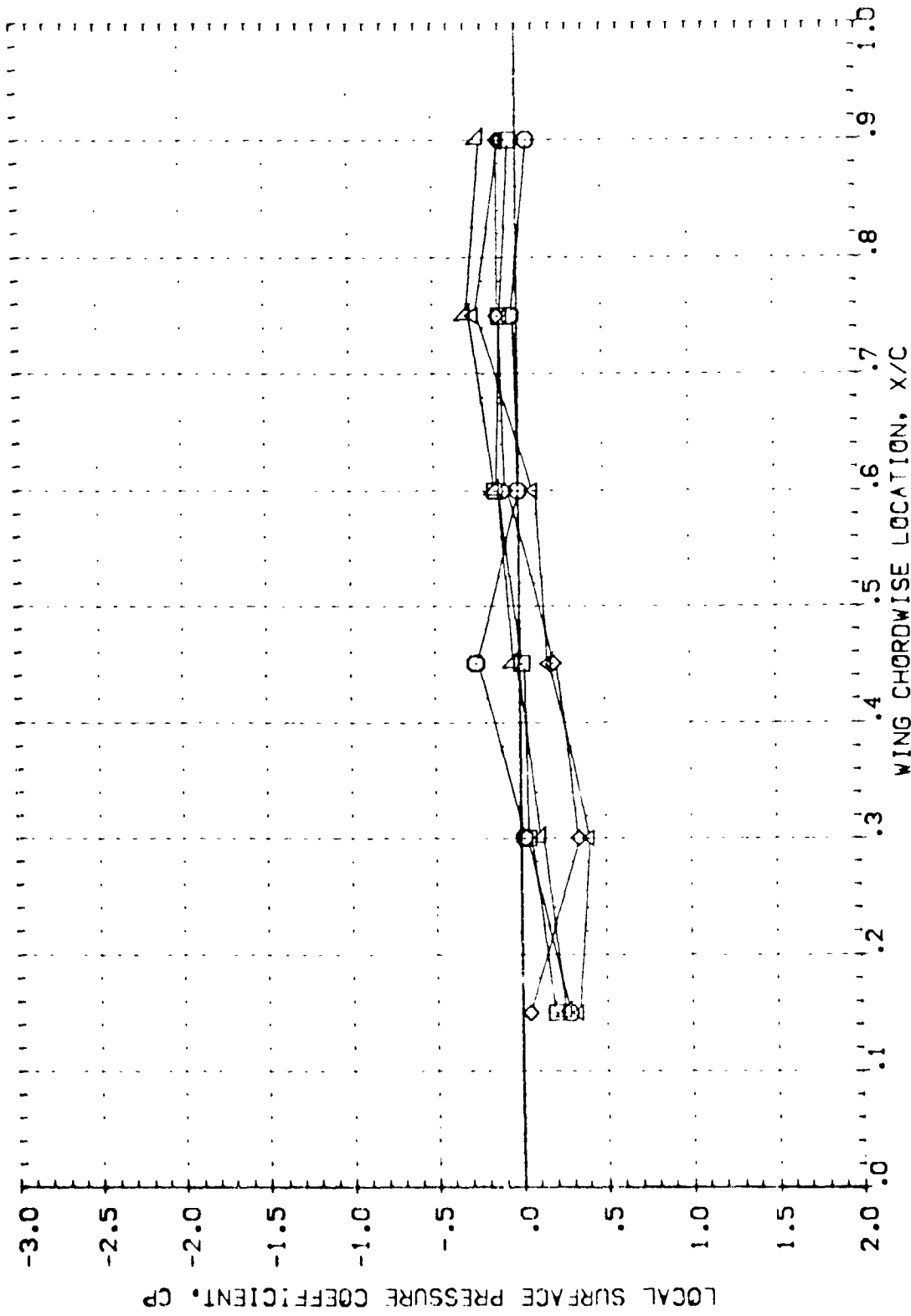


FIG 82 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE(RDVL64)

| | | | | | | |
|--------|---------------|--------|------|-------------------|---------|---------|
| SYMBOL | 2 α /B | ALPHA | MACH | PARAMETRIC VALUES | | |
| 1 | .000 | 10.000 | .165 | .000 | PTN/P | 1.000 |
| 2 | .334 | | | .039 | BD/FLAP | -18.000 |
| 3 | .520 | | | | | |
| 4 | .663 | | | | | |
| 5 | .873 | | | | | |

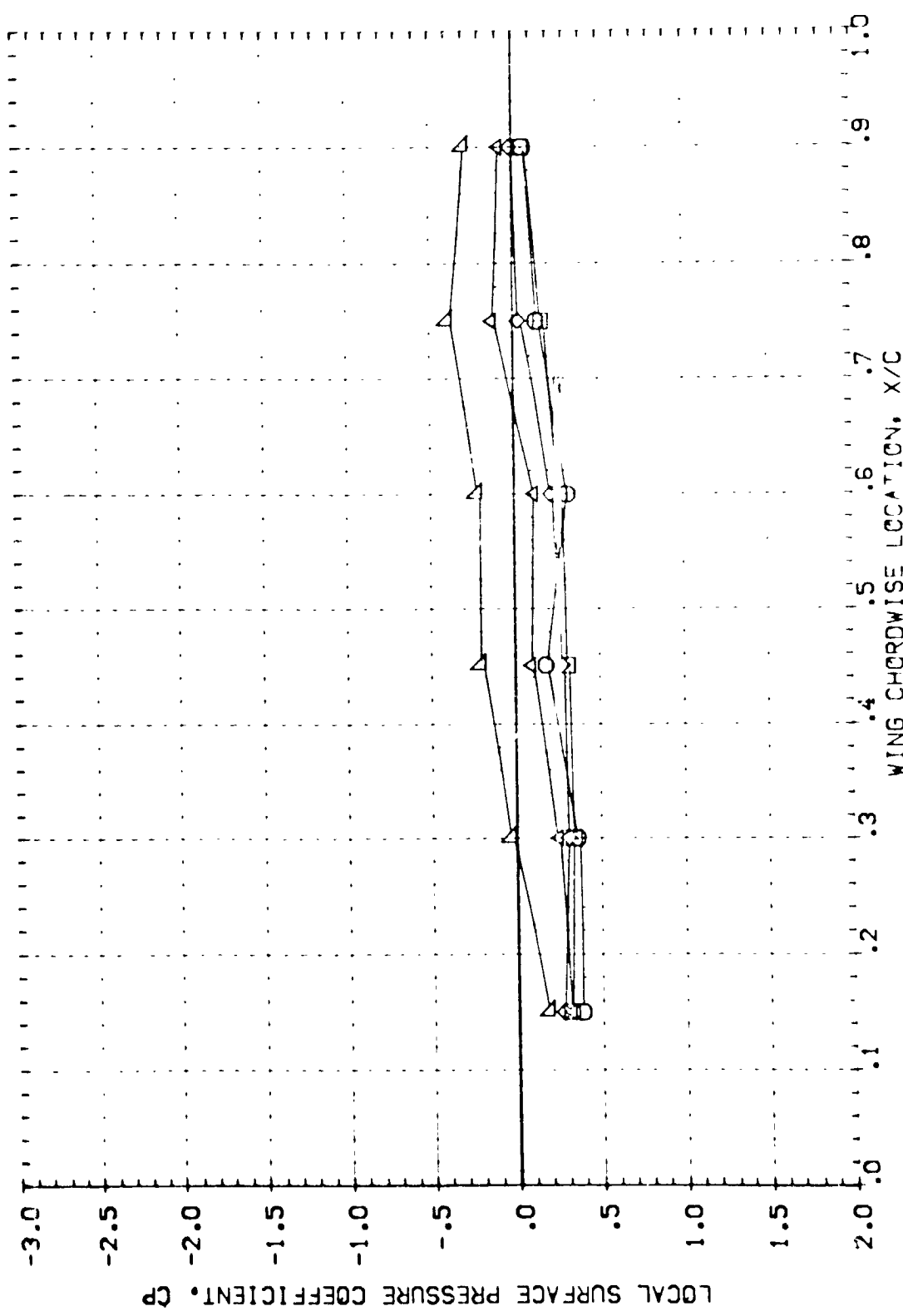


FIG 83 WING LOWER SURFACE PRESSURE COEFFICIENTS WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL61)

| SYMBOL | Z/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | BOFLAP |
| ○ | .000 | -.005 | .185 | H/B | .000 | 1.000 |
| ○ | .304 | | | ELEVON | .125 | -18.000 |
| ○ | .520 | | | | .000 | |
| ○ | .653 | | | | | |
| ○ | .673 | | | | | |

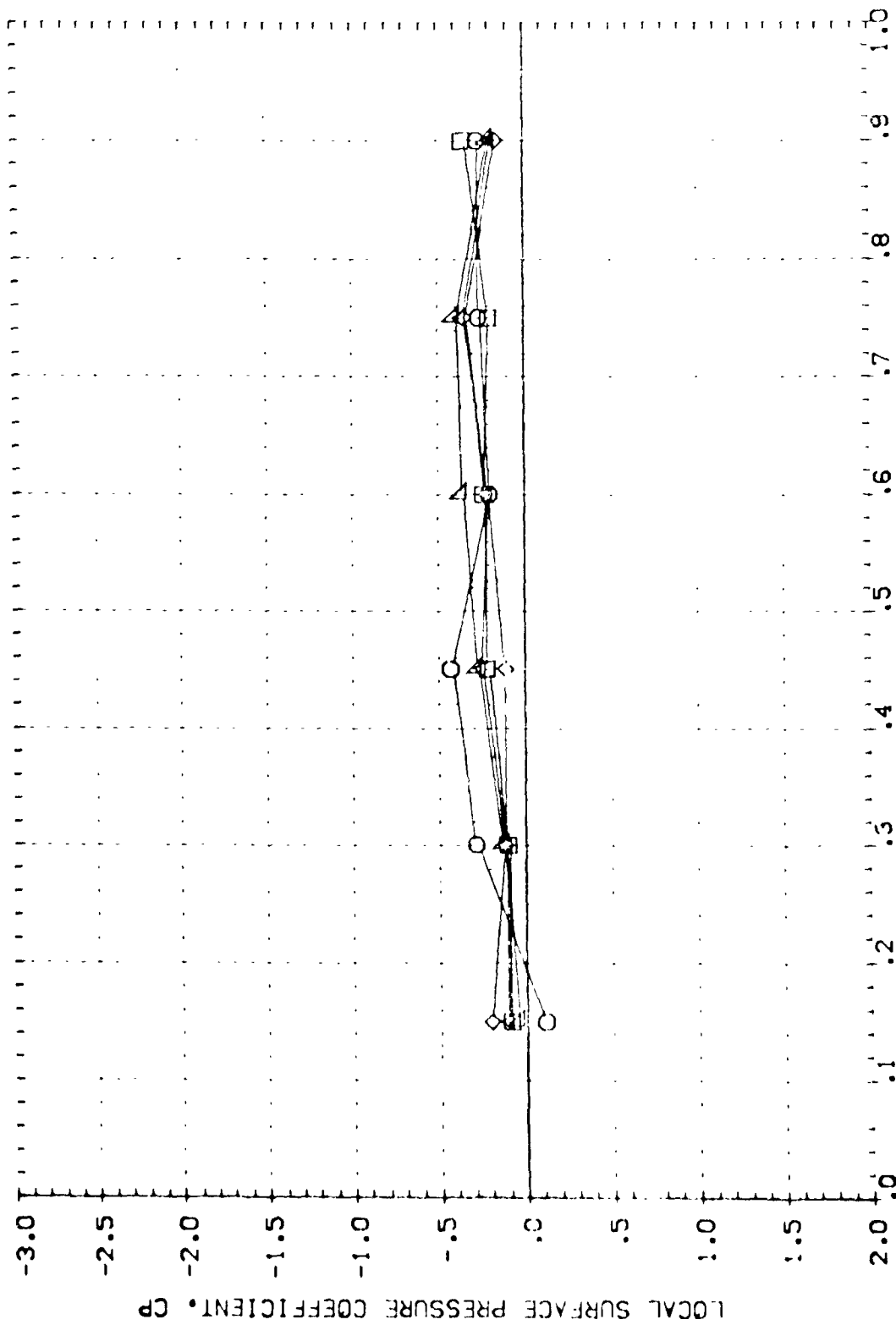


FIG 83 WING LOWER SURFACE PRESSURE COEFFICIENT DIST WITH J42, PTN/P=1.0, 0 ELEVON

Q457-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL61)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|--------|---------|
| | | | | BETA | PIN/P | 1,000 |
| | .000 | 9.565 | .165 | H/B | BOFLAP | -18,000 |
| | .334 | | | ELEVON | | |
| | .570 | | | | | |
| | .663 | | | | | |
| | .873 | | | | | |

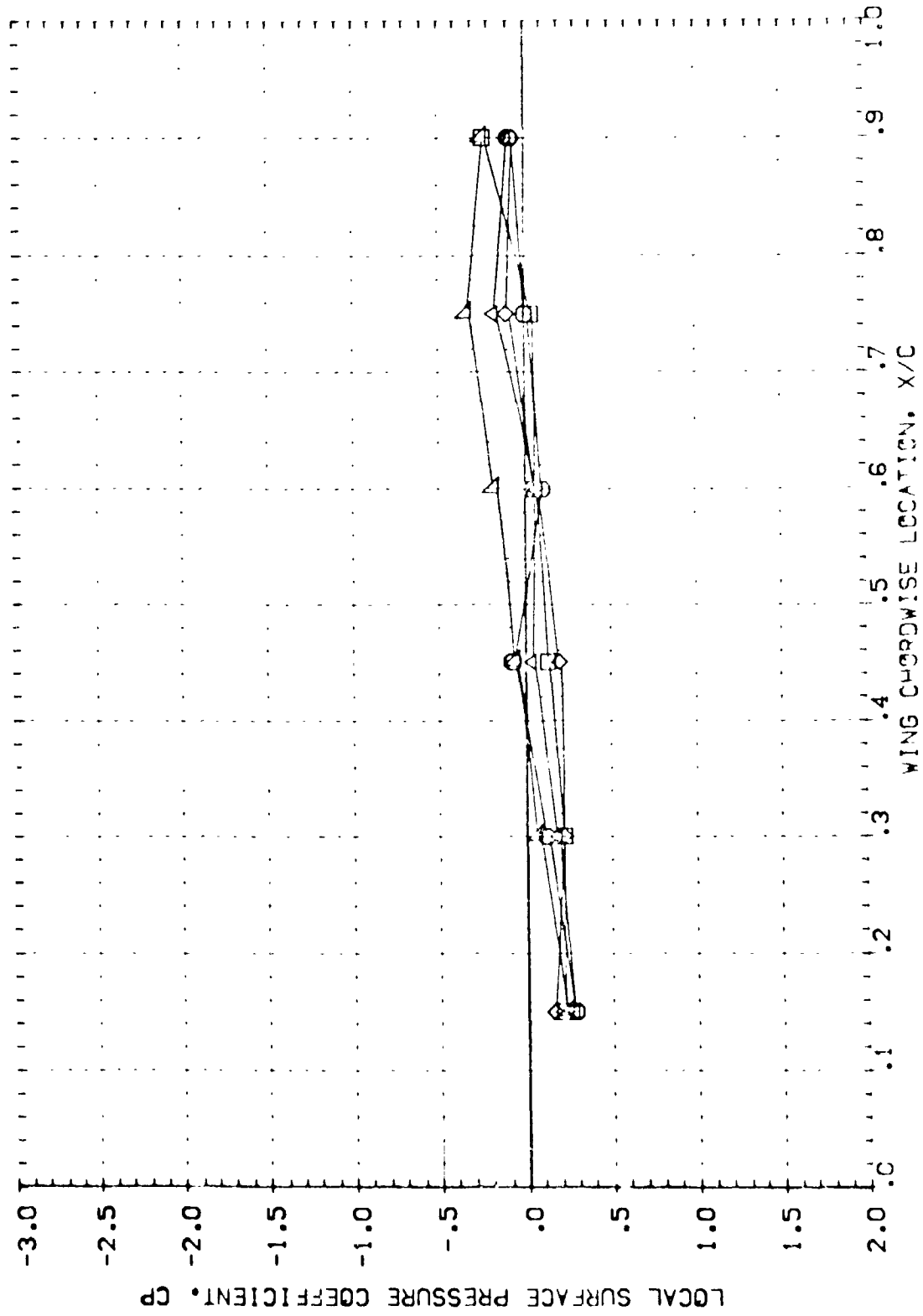


FIG 83 WING LOWER SURFACE PRESSURE COEFFICIENTS WITH J42, PIN/P=1.0, 0.5, 0.0

0A57-B B16CSF1 J42 W87E18 WING LOWER SURFACE (RDVL70)

| | | | | | |
|--------|------|-------|------|--------|-------------------|
| SYMBOL | 21/8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | .010 | .165 | H/B | DTN/P |
| ○ | .394 | | | ELEVON | BOFLAP |
| ○ | .520 | | | | |
| ○ | .663 | | | | |
| ○ | .873 | | | | |
| | | | | | 1.000 |
| | | | | | -18.000 |

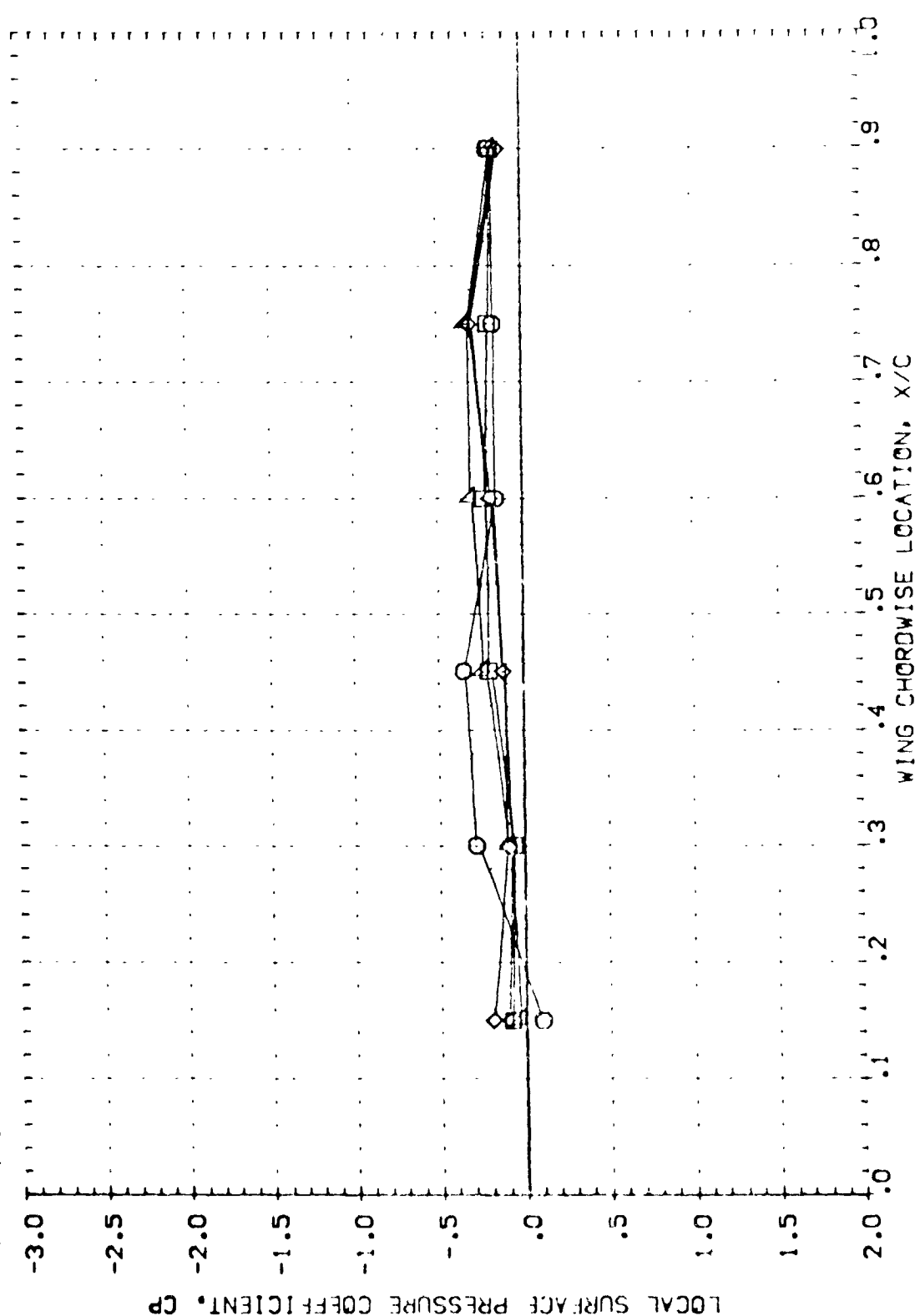


FIG 83 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, DTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL70)

PARAMETRIC VALUES
 .000 PTN/P 1.000
 .286 BDELAP -18.000
 .000

BETA
 H/B
 ELEVON

ALPHA
 9.960
 .185

27/8
 .000
 .304
 .533
 .653
 .673

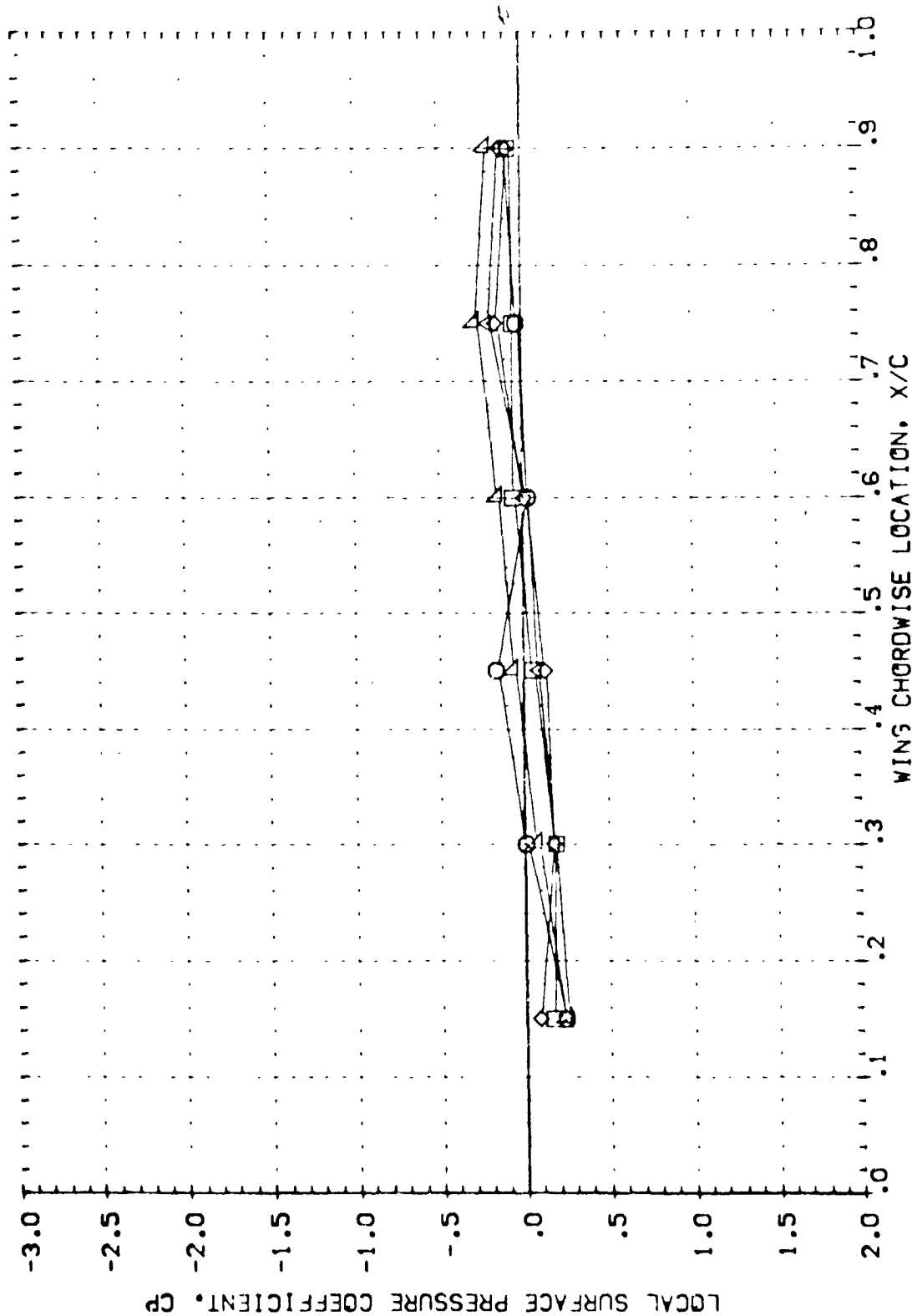


FIG 83 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B 816C5F1 J42 W87E18 WING LOWER SURFACE (RDVL63)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | ELEVON |
| ○ | .000 | 9.995 | .165 | H/B | .000 | .300 |
| □ | .334 | | | ELEVON | .039 | -18.000 |
| ◇ | .520 | | | | | |
| △ | .663 | | | | | |
| ▽ | .873 | | | | | |

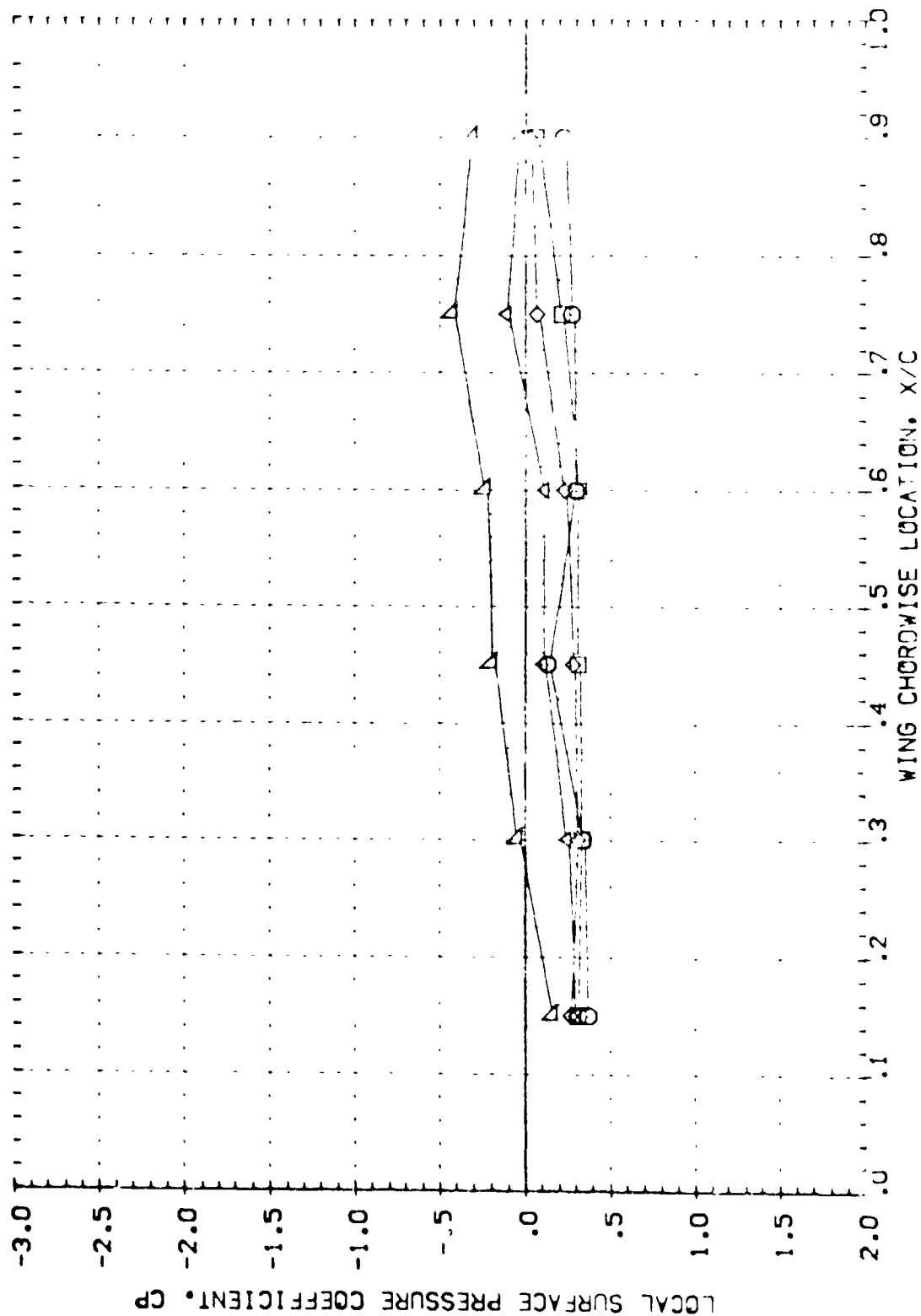


FIG 84 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

CAS-8 B1605F1 J42 *87E18 WING LOWER SURFACE (RDVL60)

| SYMBOL | 27.8 | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|--------|---------|--|
| | | | | BETA | PTN/F | 1,300 | |
| ○ | .000 | -.010 | .165 | H/B | BOFLAP | -18,000 | |
| ● | .334 | | | ELEVON | | | |
| △ | .520 | | | | | | |
| ◇ | .633 | | | | | | |
| × | .873 | | | | | | |

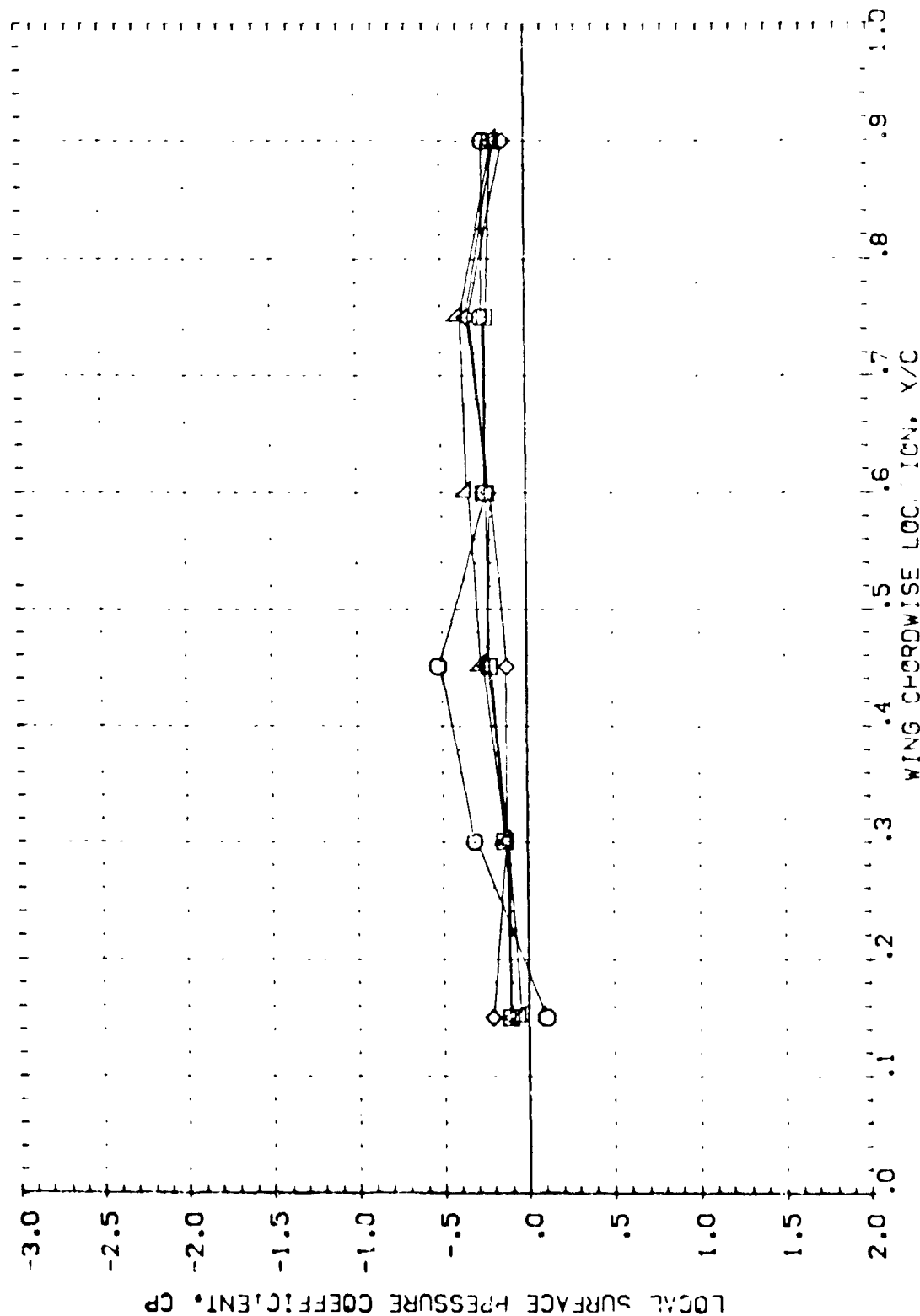


FIG 84 WING LOWER SURFACE PRESSURE COEFFICIENT DIST. WITH $\alpha = 0.0, 0.334, 0.520, 0.633, 0.873$ ELEVON

0A57-B B16C5F1 J42 W8"E18 WING LOWER SURFACE (RDVL60)

| SYMBOL | Z/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | BOFLAP |
| 0.0 | .000 | 9.960 | .185 | M/B | .000 | 1.300 |
| 1.0 | .334 | | | ELEVON | .125 | -18.000 |
| | .520 | | | | .000 | |
| | .653 | | | | | |
| | .773 | | | | | |

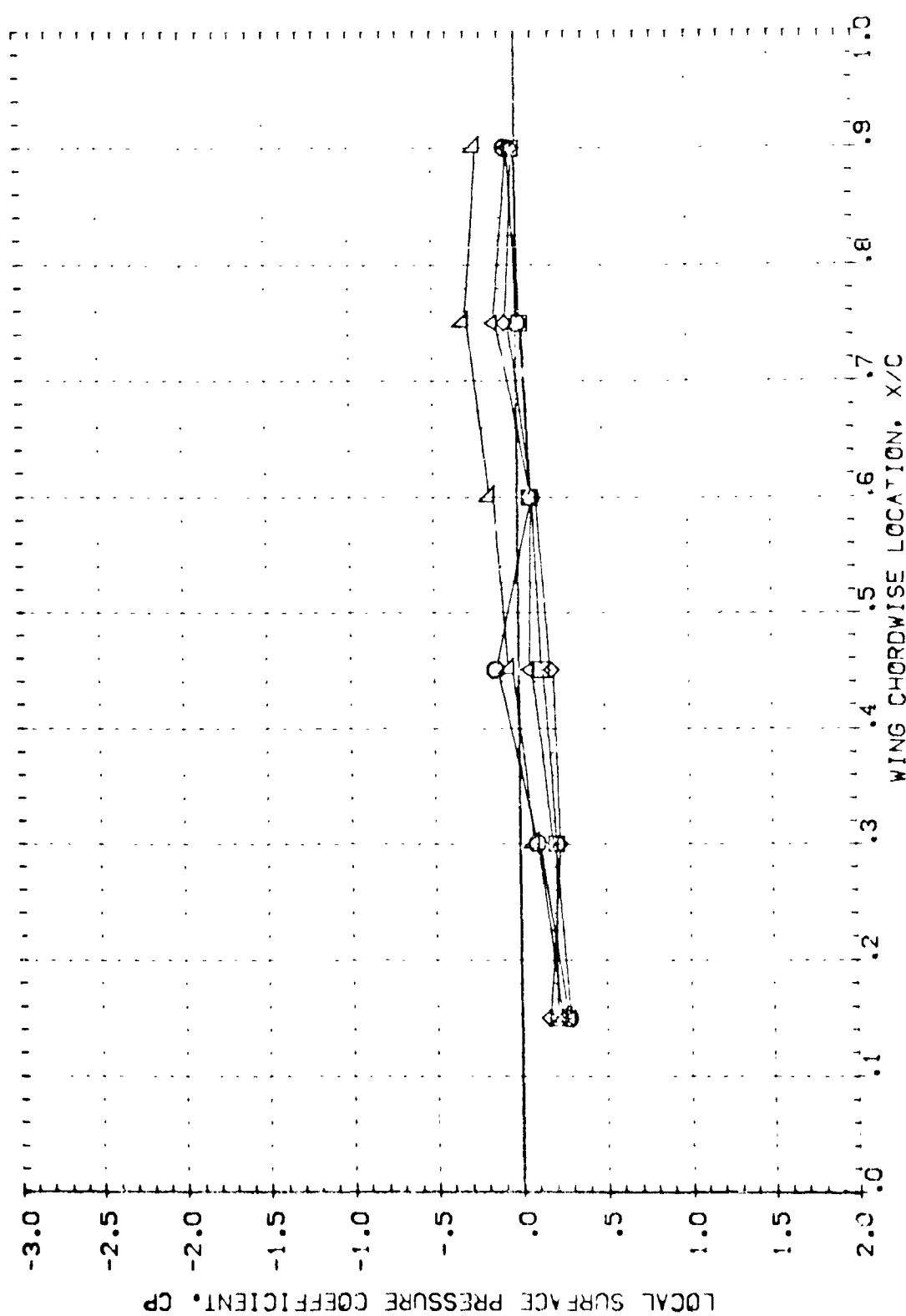


FIG 84 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL69)

| SYMBOL | 2Y/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| 0.000 | .000 | .005 | .165 | .000 | .000 | .000 | 1.300 |
| 0.034 | .034 | .005 | .165 | .000 | .000 | .000 | -18.000 |
| 0.520 | .520 | .005 | .165 | .000 | .000 | .000 | .000 |
| 0.663 | .663 | .005 | .165 | .000 | .000 | .000 | .000 |
| 0.673 | .673 | .005 | .165 | .000 | .000 | .000 | .000 |

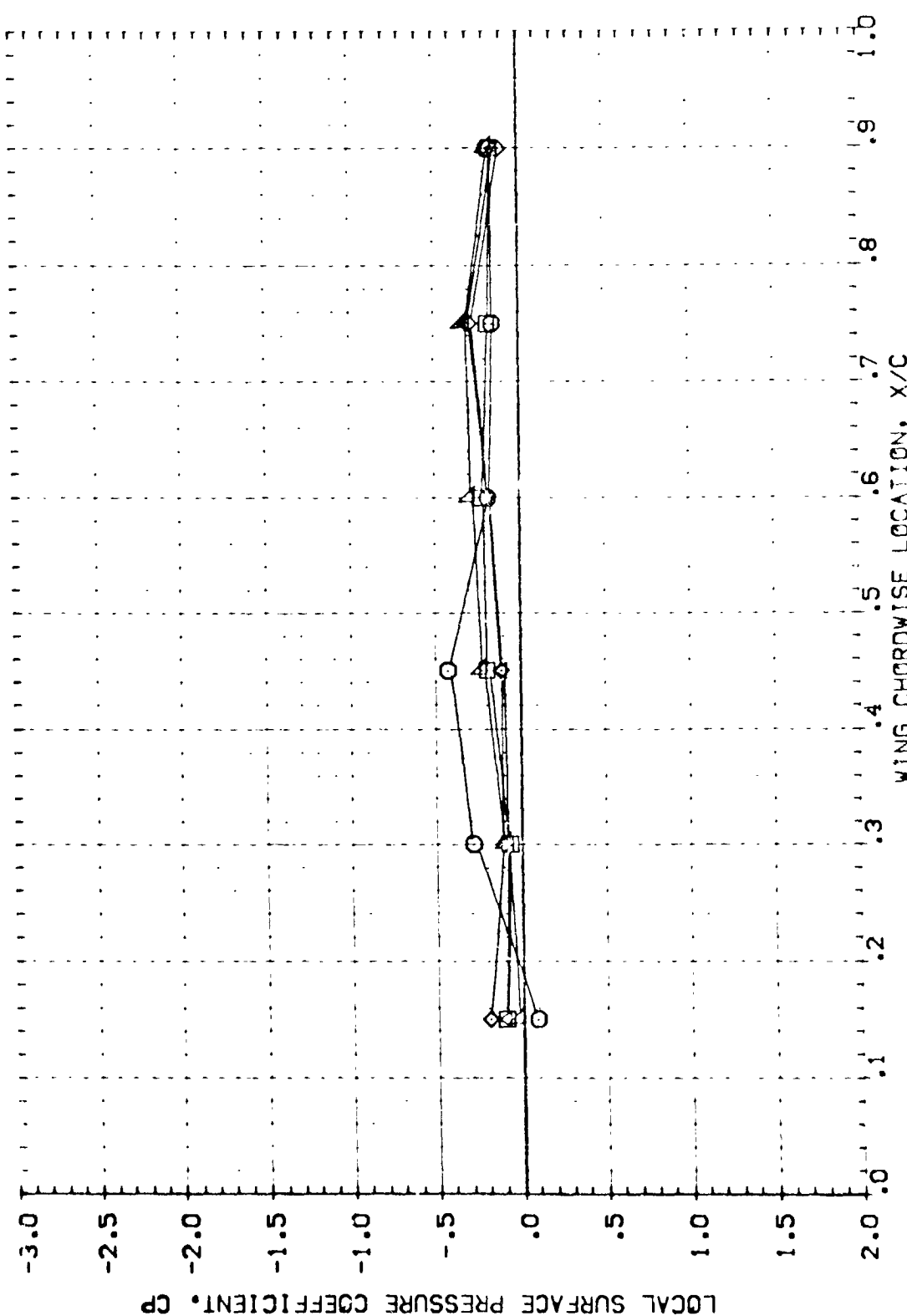


FIG 84 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B16CSF1 J42 W87E18 WING LOWER SURFACE (RDVL69)

| | | | | | | |
|--------|------|--------|------|-------------------|--------|---------|
| SYMBOL | 21/6 | ALPHA | MACH | PARAMETRIC VALUES | | |
| | .000 | 10.010 | .165 | BETA | PTV/P | 1.300 |
| | .334 | | | H/D | BOFLAP | -18.000 |
| | .520 | | | ELEVON | | .000 |
| | .693 | | | | | |
| | .873 | | | | | |

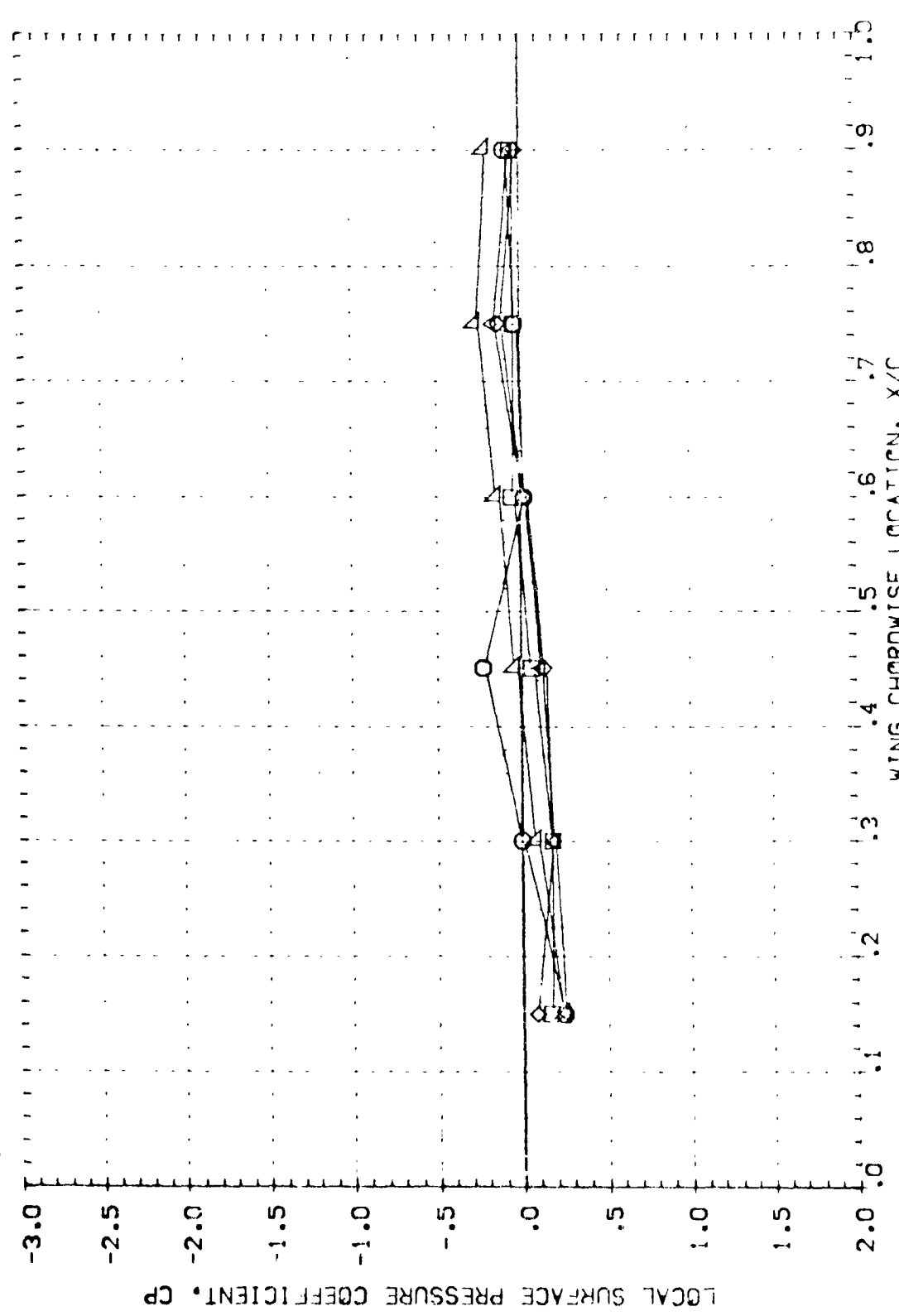


FIG 84 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTV/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL62)

| SYMBOL | Z/8 | ALPHA | HACH | PARAMETRIC VALUES | | |
|--------|------|--------|------|-------------------|--------|------------------|
| | | | | BETA H/B | PTN/P | 1.500 -18.000 |
| □ | .000 | 10.000 | .165 | .039 | BDFLAP | .000 |
| ◇ | .334 | | | | | |
| △ | .520 | | | | | |
| ○ | .653 | | | | | |
| △ | .873 | | | | | |

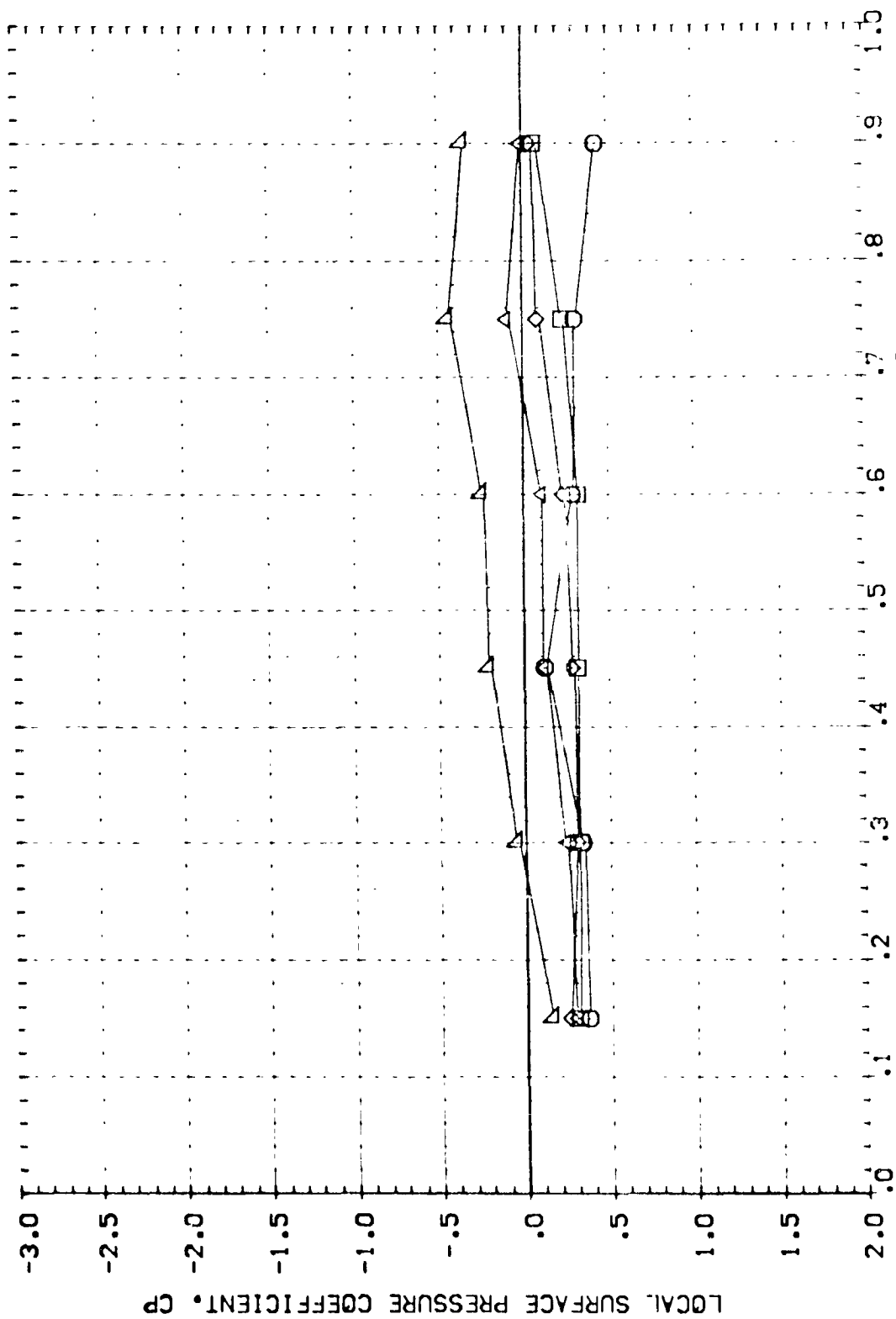


FIG 85 WING LOWER SURFACE PRESSURE COEFFICIENTS AT $\alpha = 12^\circ$, $PTN/P = 1.5$, $Z/8 = 0.0, 0.334, 0.520, 0.653, 0.873$

0A57-8 B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL59)

| | | | | | |
|--------|------|--------|------|--------|-------------------|
| SYMBOL | 2N/B | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| | .000 | -0.010 | .165 | H/B | .000 |
| | .334 | | | ELEVON | .125 |
| | .500 | | | | .000 |
| | .653 | | | | |
| | .873 | | | | |
| | | | | | PTN/P |
| | | | | | 1.500 |
| | | | | | -18.000 |

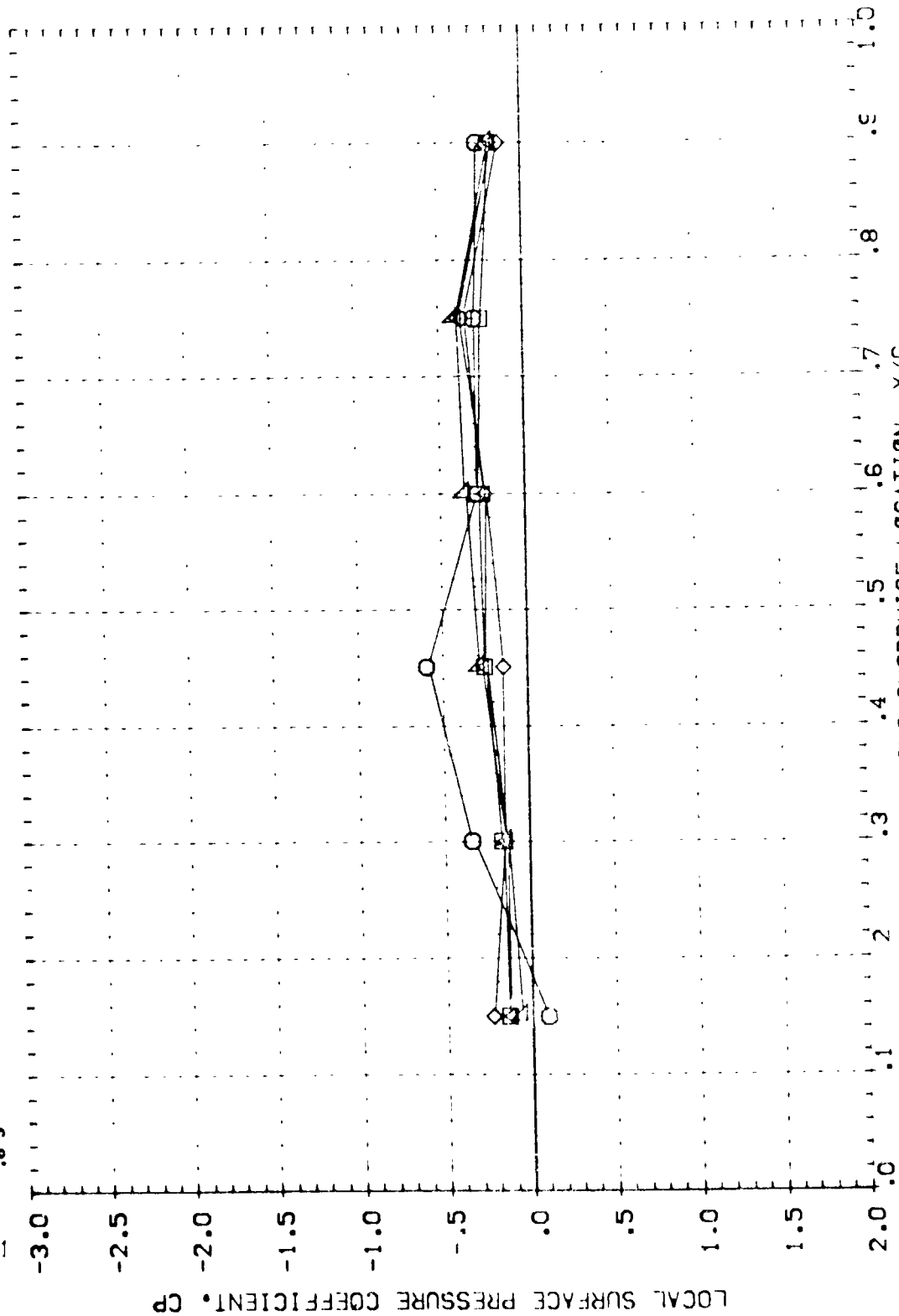


FIG 85 WING LOWER SURFACE PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON

CA57-B B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL59)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | ELEVON |
| ○ | .000 | 9.955 | .165 | .000 | 1.500 | |
| △ | .334 | | | .125 | | -18.000 |
| □ | .520 | | | .000 | | |
| ◇ | .663 | | | | | |
| + | .873 | | | | | |

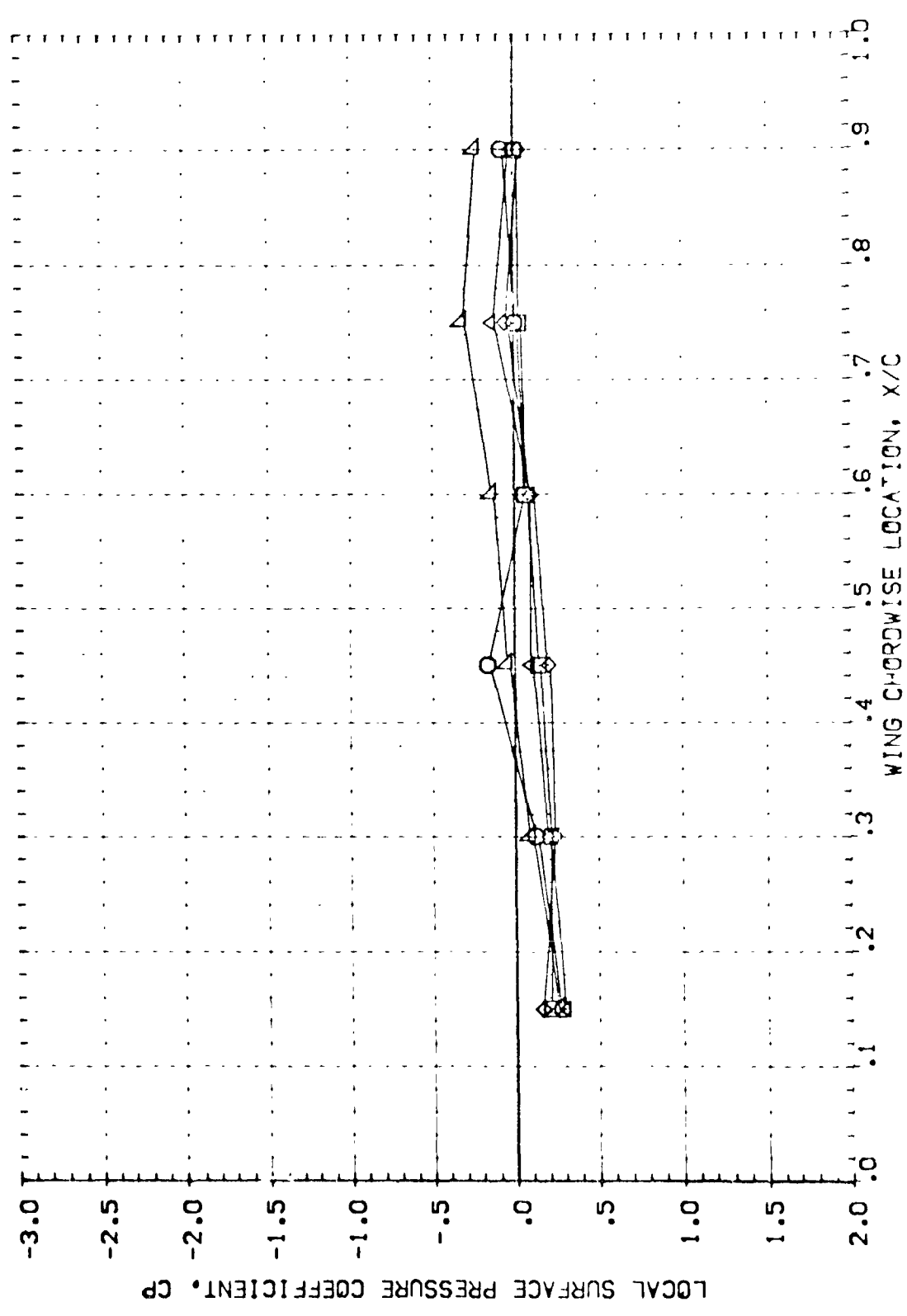


FIG 85 WING LOWER SURFACE PRESSURE COEFFICIENT, CP vs. WING CHORDWISE LOCATION, X/C

0A57-9 B16C5F1 J42 W87E18 WING LOWER SURFACE (RDVL68)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|--------|---------|
| | | | | BETA | PTN/P | 1.500 |
| | .000 | .010 | .165 | H/B | BDFLAP | -18.000 |
| | .334 | | | ELEVON | | |
| | .500 | | | | | |
| | .663 | | | | | |
| | .873 | | | | | |

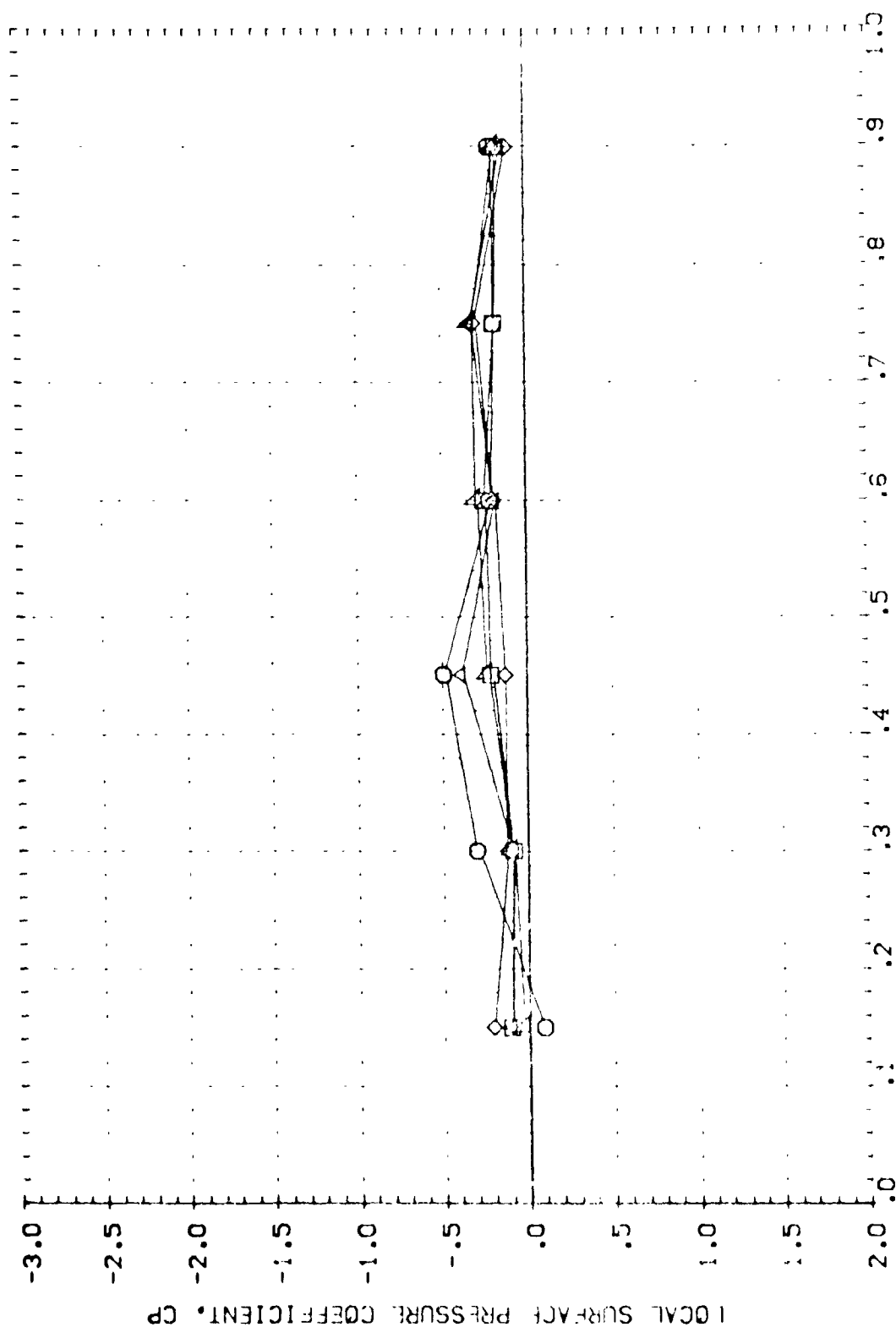


FIG 85 WING LOWER SURFACE PRESSURE COEFFICIENTS WITH J42, PTN/P=1.5, 0 ELEVON

0A57-B 816C5F1 J42 W87E18 WING LOWER SURFACE (RDVL68)

| SYMBOL | 2Y/B | ALPHA | MACH | BETA | PARAMETRIC VALUES |
|--------|------|-------|------|--------|---------------------|
| ○ | .000 | 9.980 | .165 | H/B | .000 PTN/P 1.500 |
| ◇ | .304 | | | ELEVON | .206 BOFLAP -18.000 |
| △ | .570 | | | | |
| □ | .663 | | | | |
| + | .873 | | | | |

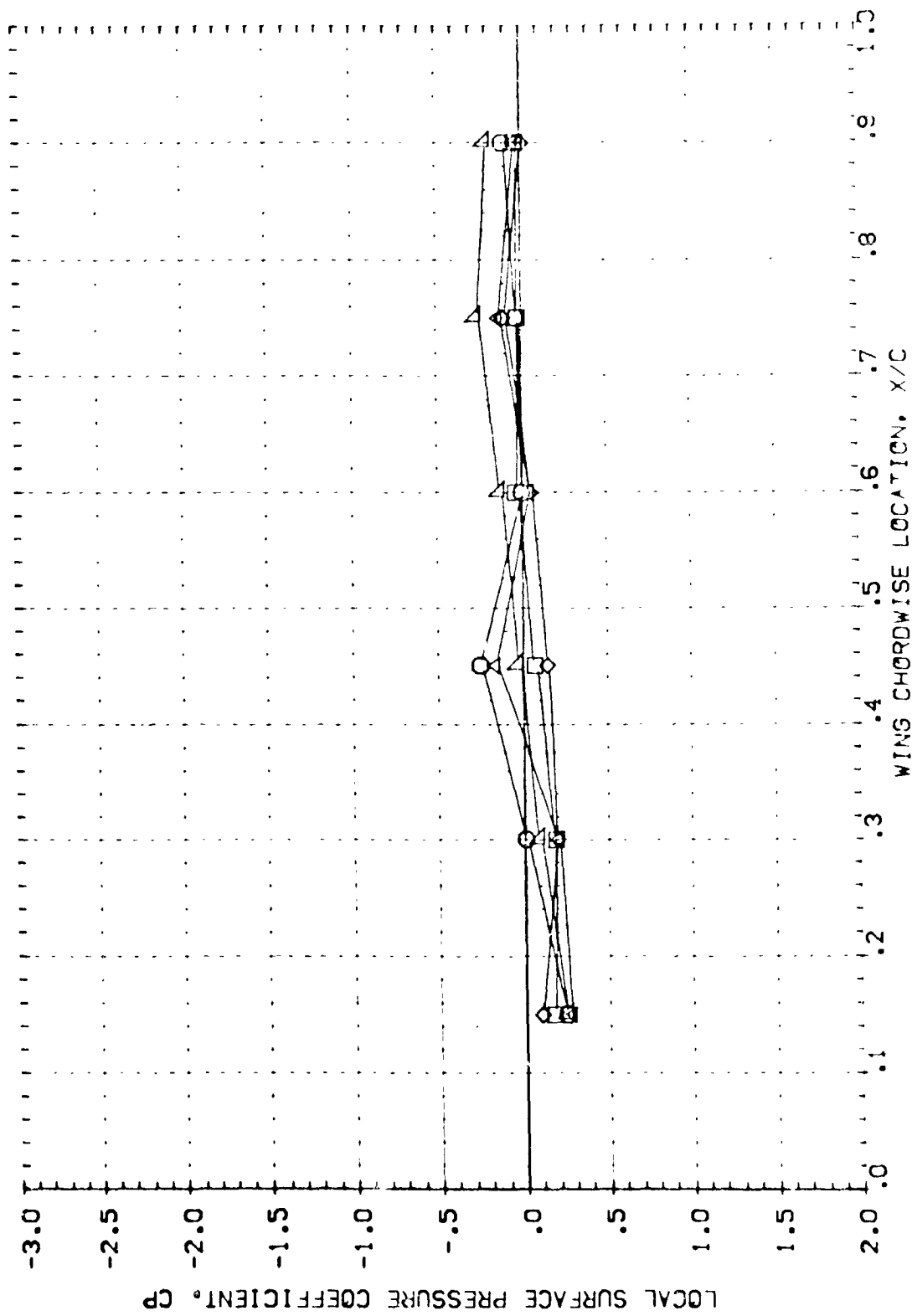


FIG 85 WING LOWER SURFACE PRESSURE COEFFICIENT WITH J42, PTN/P=1.5, 0 ELEVON

0457-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW03)

| | | | | | |
|--------|------|--------|------|--------|-------------------|
| SYMBOL | 27.8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| | .000 | 10.000 | .165 | H/B | .000 PTH/P |
| | .304 | | | ELEVON | .039 BOT/LAP |
| | .500 | | | | .000 |
| | .693 | | | | |
| | .873 | | | | |

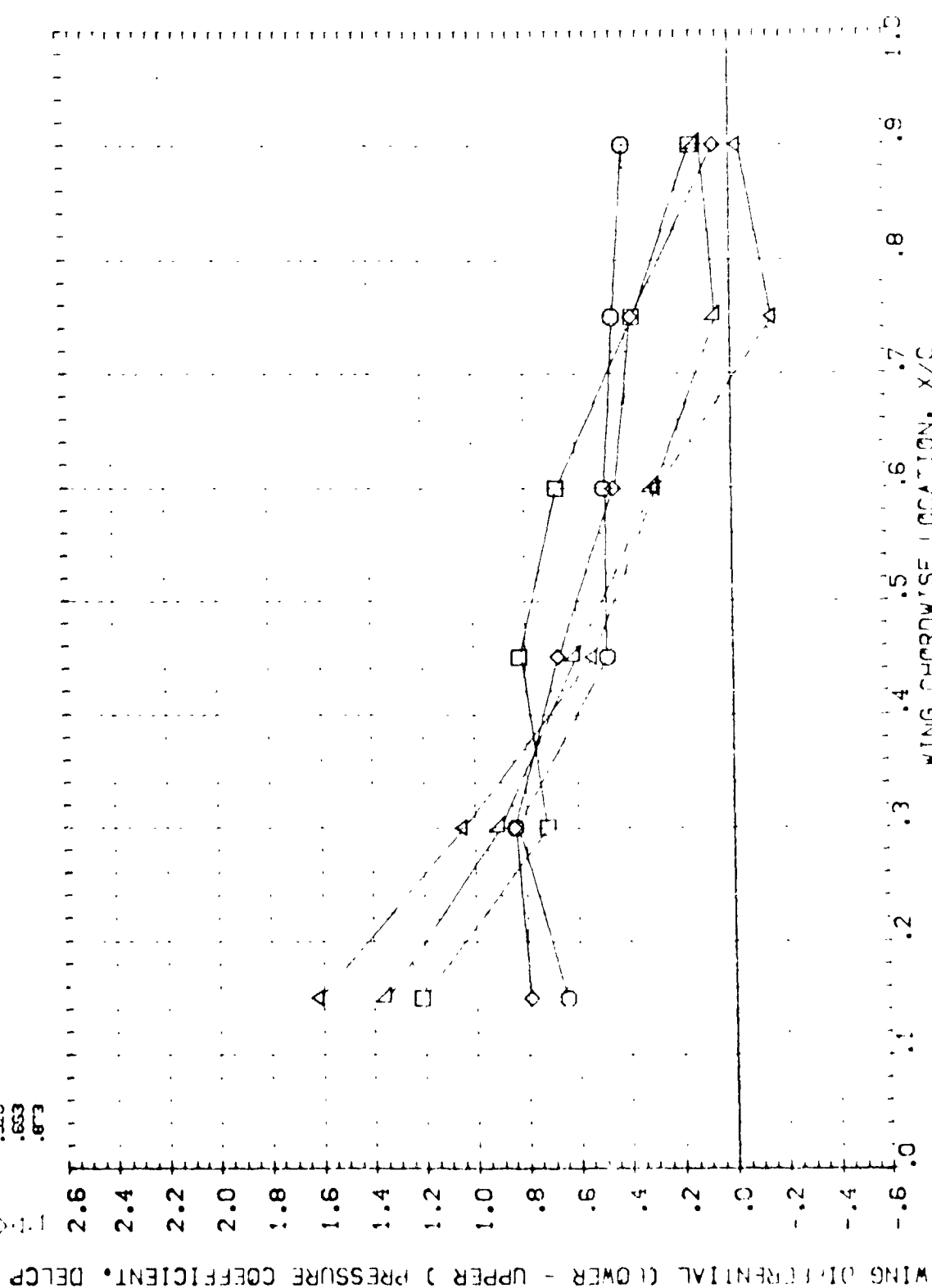


FIG 86 WING DIFFERENTIAL PRESSURE CHORDWISE DIST. AT $\alpha = 14.0^\circ$, $M = 0.165$, $B = 1.0$, $P_{TH} = 0$, $P_{BOT} = 0$

0A57-B 316C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW06)

| | | | | | | |
|-------|------|-------|------|--------|-------------------|--------|
| SYNTH | 2Y/B | ALPHA | MACH | BETA | PARAMETRIC VALUES | |
| | .000 | .010 | .165 | H/B | .000 | PTN/P |
| | .334 | | | ELEVON | .125 | BOFLAP |
| | .570 | | | | .000 | |
| | .663 | | | | | |
| | .873 | | | | | |

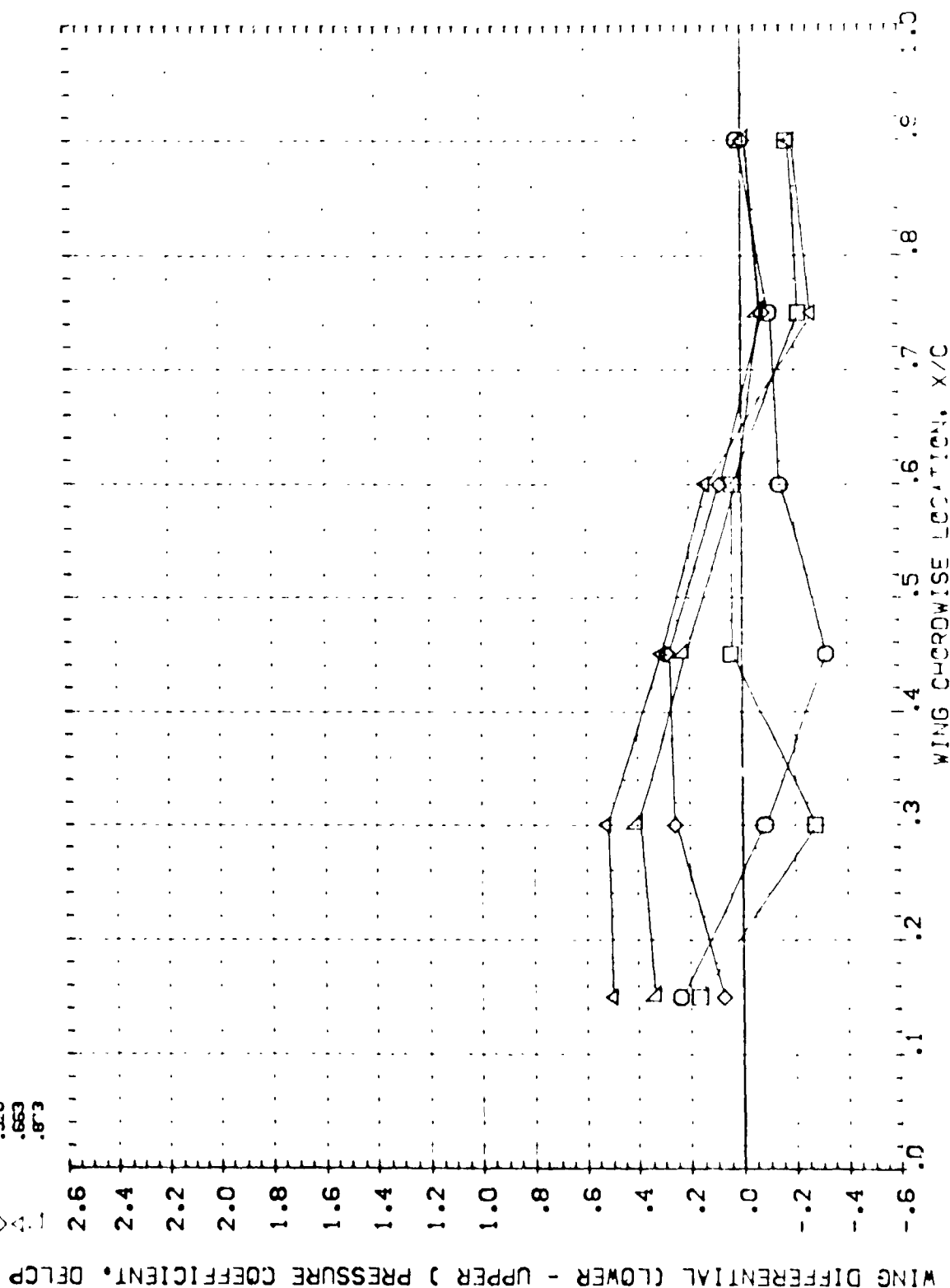


FIG 86 WING DIFFERENTIAL PRESSURE COEFFICIENT DIST WITH 240, PTN/P=1.0, BOFLAP=0.0

QAS-B B:60551 J40 W87E18 WING TOTAL SURFACE (ADW06)

PARAMETRIC VALUES
 BETA .000 PIV/P 1.000
 H/B .125 BOFLAP -18.000
 ELEVON .000

SYMBOL Z/B ALPHA MACH
 O .000 10.015
 .334
 .522
 .663
 .873

WING DIFFERENTIAL (LOWER - UPPER) PRESSURE COEFFICIENT, DELCP

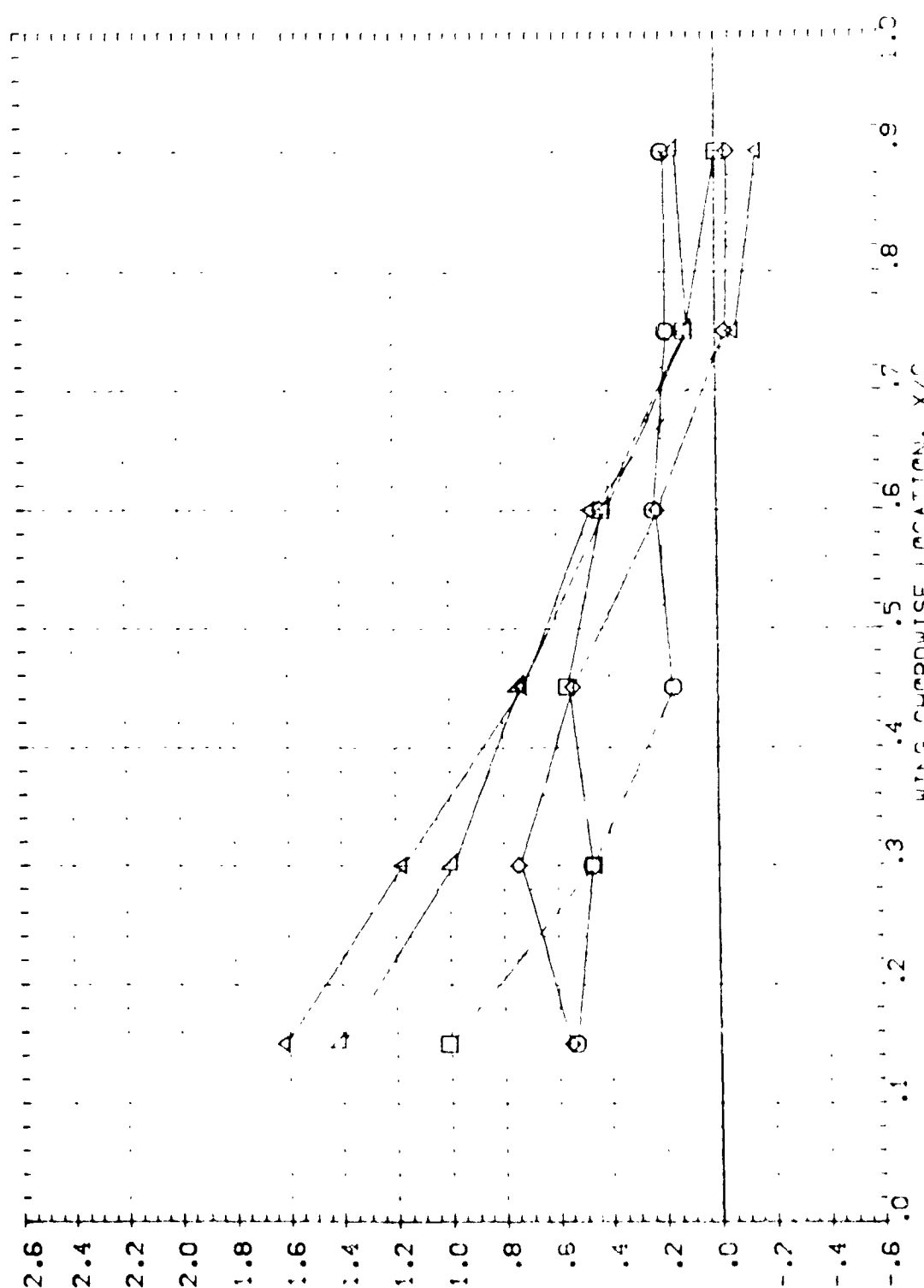
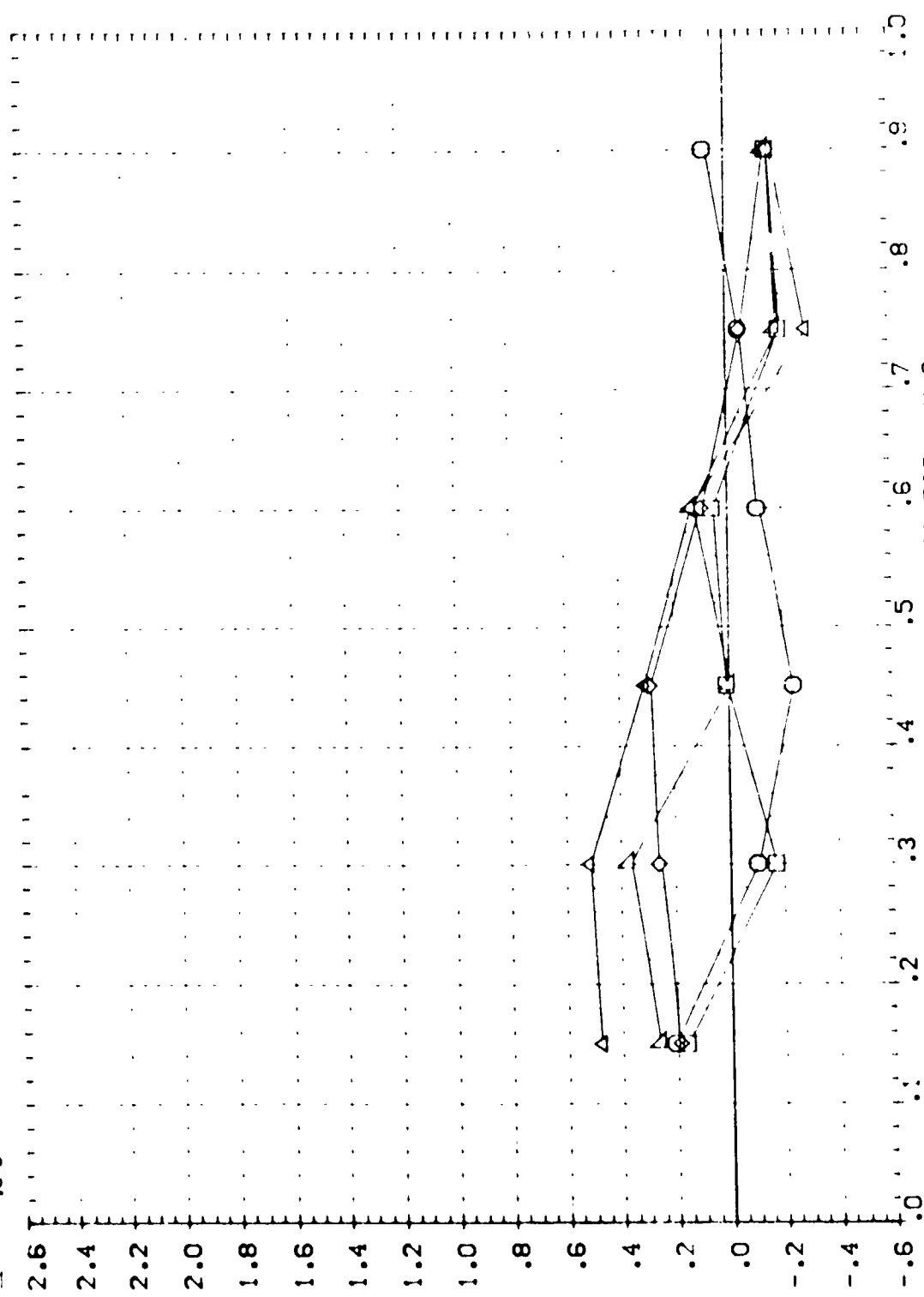


FIG 86 WING DIFFERENTIAL PRESSURE COEFFICIENT, DELCP, MACH 10.015, Z/B=0.0, 0.334, 0.522, 0.663
 WING CHORDWISE LOCATION, X/C
 PAGE 400

0457-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADJW15)

| | | | | | |
|--------|------|-------|------|--------|-------------------|
| SYMBOL | 27.8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | .015 | .165 | M/B | .000 P/N P |
| △ | .304 | | | ELEVON | .706 BDF LAP |
| □ | .550 | | | | .000 |
| ⊗ | .603 | | | | |
| ⊙ | .673 | | | | |

WING DIFFERENTIAL (LOWER - UPPER) PRESSURE COEFFICIENT, DELCP



WING CHORDWISE LOCATION, X/C

FIG 98 WING DIFFERENTIAL PRESSURE COEFFICIENT WITH 240, 374, 440, 510, 580, 650, 720, 790, 860, 930, 1000, 1070, 1140, 1210, 1280, 1350, 1420, 1490, 1560, 1630, 1700, 1770, 1840, 1910, 1980, 2050, 2120, 2190, 2260, 2330, 2400, 2470, 2540, 2610, 2680, 2750, 2820, 2890, 2960, 3030, 3100, 3170, 3240, 3310, 3380, 3450, 3520, 3590, 3660, 3730, 3800, 3870, 3940, 4010, 4080, 4150, 4220, 4290, 4360, 4430, 4500, 4570, 4640, 4710, 4780, 4850, 4920, 4990, 5060, 5130, 5200, 5270, 5340, 5410, 5480, 5550, 5620, 5690, 5760, 5830, 5900, 5970, 6040, 6110, 6180, 6250, 6320, 6390, 6460, 6530, 6600, 6670, 6740, 6810, 6880, 6950, 7020, 7090, 7160, 7230, 7300, 7370, 7440, 7510, 7580, 7650, 7720, 7790, 7860, 7930, 8000, 8070, 8140, 8210, 8280, 8350, 8420, 8490, 8560, 8630, 8700, 8770, 8840, 8910, 8980, 9050, 9120, 9190, 9260, 9330, 9400, 9470, 9540, 9610, 9680, 9750, 9820, 9890, 9960, 10030, 10100, 10170, 10240, 10310, 10380, 10450, 10520, 10590, 10660, 10730, 10800, 10870, 10940, 11010, 11080, 11150, 11220, 11290, 11360, 11430, 11500, 11570, 11640, 11710, 11780, 11850, 11920, 11990, 12060, 12130, 12200, 12270, 12340, 12410, 12480, 12550, 12620, 12690, 12760, 12830, 12900, 12970, 13040, 13110, 13180, 13250, 13320, 13390, 13460, 13530, 13600, 13670, 13740, 13810, 13880, 13950, 14020, 14090, 14160, 14230, 14300, 14370, 14440, 14510, 14580, 14650, 14720, 14790, 14860, 14930, 15000, 15070, 15140, 15210, 15280, 15350, 15420, 15490, 15560, 15630, 15700, 15770, 15840, 15910, 15980, 16050, 16120, 16190, 16260, 16330, 16400, 16470, 16540, 16610, 16680, 16750, 16820, 16890, 16960, 17030, 17100, 17170, 17240, 17310, 17380, 17450, 17520, 17590, 17660, 17730, 17800, 17870, 17940, 18010, 18080, 18150, 18220, 18290, 18360, 18430, 18500, 18570, 18640, 18710, 18780, 18850, 18920, 18990, 19060, 19130, 19200, 19270, 19340, 19410, 19480, 19550, 19620, 19690, 19760, 19830, 19900, 19970, 20040, 20110, 20180, 20250, 20320, 20390, 20460, 20530, 20600, 20670, 20740, 20810, 20880, 20950, 21020, 21090, 21160, 21230, 21300, 21370, 21440, 21510, 21580, 21650, 21720, 21790, 21860, 21930, 22000, 22070, 22140, 22210, 22280, 22350, 22420, 22490, 22560, 22630, 22700, 22770, 22840, 22910, 22980, 23050, 23120, 23190, 23260, 23330, 23400, 23470, 23540, 23610, 23680, 23750, 23820, 23890, 23960, 24030, 24100, 24170, 24240, 24310, 24380, 24450, 24520, 24590, 24660, 24730, 24800, 24870, 24940, 25010, 25080, 25150, 25220, 25290, 25360, 25430, 25500, 25570, 25640, 25710, 25780, 25850, 25920, 25990, 26060, 26130, 26200, 26270, 26340, 26410, 26480, 26550, 26620, 26690, 26760, 26830, 26900, 26970, 27040, 27110, 27180, 27250, 27320, 27390, 27460, 27530, 27600, 27670, 27740, 27810, 27880, 27950, 28020, 28090, 28160, 28230, 28300, 28370, 28440, 28510, 28580, 28650, 28720, 28790, 28860, 28930, 29000, 29070, 29140, 29210, 29280, 29350, 29420, 29490, 29560, 29630, 29700, 29770, 29840, 29910, 29980, 30050, 30120, 30190, 30260, 30330, 30400, 30470, 30540, 30610, 30680, 30750, 30820, 30890, 30960, 31030, 31100, 31170, 31240, 31310, 31380, 31450, 31520, 31590, 31660, 31730, 31800, 31870, 31940, 32010, 32080, 32150, 32220, 32290, 32360, 32430, 32500, 32570, 32640, 32710, 32780, 32850, 32920, 32990, 33060, 33130, 33200, 33270, 33340, 33410, 33480, 33550, 33620, 33690, 33760, 33830, 33900, 33970, 34040, 34110, 34180, 34250, 34320, 34390, 34460, 34530, 34600, 34670, 34740, 34810, 34880, 34950, 35020, 35090, 35160, 35230, 35300, 35370, 35440, 35510, 35580, 35650, 35720, 35790, 35860, 35930, 36000, 36070, 36140, 36210, 36280, 36350, 36420, 36490, 36560, 36630, 36700, 36770, 36840, 36910, 36980, 37050, 37120, 37190, 37260, 37330, 37400, 37470, 37540, 37610, 37680, 37750, 37820, 37890, 37960, 38030, 38100, 38170, 38240, 38310, 38380, 38450, 38520, 38590, 38660, 38730, 38800, 38870, 38940, 39010, 39080, 39150, 39220, 39290, 39360, 39430, 39500, 39570, 39640, 39710, 39780, 39850, 39920, 39990, 40060, 40130, 40200, 40270, 40340, 40410, 40480, 40550, 40620, 40690, 40760, 40830, 40900, 40970, 41040, 41110, 41180, 41250, 41320, 41390, 41460, 41530, 41600, 41670, 41740, 41810, 41880, 41950, 42020, 42090, 42160, 42230, 42300, 42370, 42440, 42510, 42580, 42650, 42720, 42790, 42860, 42930, 43000, 43070, 43140, 43210, 43280, 43350, 43420, 43490, 43560, 43630, 43700, 43770, 43840, 43910, 43980, 44050, 44120, 44190, 44260, 44330, 44400, 44470, 44540, 44610, 44680, 44750, 44820, 44890, 44960, 45030, 45100, 45170, 45240, 45310, 45380, 45450, 45520, 45590, 45660, 45730, 45800, 45870, 45940, 46010, 46080, 46150, 46220, 46290, 46360, 46430, 46500, 46570, 46640, 46710, 46780, 46850, 46920, 46990, 47060, 47130, 47200, 47270, 47340, 47410, 47480, 47550, 47620, 47690, 47760, 47830, 47900, 47970, 48040, 48110, 48180, 48250, 48320, 48390, 48460, 48530, 48600, 48670, 48740, 48810, 48880, 48950, 49020, 49090, 49160, 49230, 49300, 49370, 49440, 49510, 49580, 49650, 49720, 49790, 49860, 49930, 50000, 50070, 50140, 50210, 50280, 50350, 50420, 50490, 50560, 50630, 50700, 50770, 50840, 50910, 50980, 51050, 51120, 51190, 51260, 51330, 51400, 51470, 51540, 51610, 51680, 51750, 51820, 51890, 51960, 52030, 52100, 52170, 52240, 52310, 52380, 52450, 52520, 52590, 52660, 52730, 52800, 52870, 52940, 53010, 53080, 53150, 53220, 53290, 53360, 53430, 53500, 53570, 53640, 53710, 53780, 53850, 53920, 53990, 54060, 54130, 54200, 54270, 54340, 54410, 54480, 54550, 54620, 54690, 54760, 54830, 54900, 54970, 55040, 55110, 55180, 55250, 55320, 55390, 55460, 55530, 55600, 55670, 55740, 55810, 55880, 55950, 56020, 56090, 56160, 56230, 56300, 56370, 56440, 56510, 56580, 56650, 56720, 56790, 56860, 56930, 57000, 57070, 57140, 57210, 57280, 57350, 57420, 57490, 57560, 57630, 57700, 57770, 57840, 57910, 57980, 58050, 58120, 58190, 58260, 58330, 58400, 58470, 58540, 58610, 58680, 58750, 58820, 58890, 58960, 59030, 59100, 59170, 59240, 59310, 59380, 59450, 59520, 59590, 59660, 59730, 59800, 59870, 59940, 60010, 60080, 60150, 60220, 60290, 60360, 60430, 60500, 60570, 60640, 60710, 60780, 60850, 60920, 60990, 61060, 61130, 61200, 61270, 61340, 61410, 61480, 61550, 61620, 61690, 61760, 61830, 61900, 61970, 62040, 62110, 62180, 62250, 62320, 62390, 62460, 62530, 62600, 62670, 62740, 62810, 62880, 62950, 63020, 63090, 63160, 63230, 63300, 63370, 63440, 63510, 63580, 63650, 63720, 63790, 63860, 63930, 64000, 64070, 64140, 64210, 64280, 64350, 64420, 64490, 64560, 64630, 64700, 64770, 64840, 64910, 64980, 65050, 65120, 65190, 65260, 65330, 65400, 65470, 65540, 65610, 65680, 65750, 65820, 65890, 65960, 66030, 66100, 66170, 66240, 66310, 66380, 66450, 66520, 66590, 66660, 66730, 66800, 66870, 66940, 67010, 67080, 67150, 67220, 67290, 67360, 67430, 67500, 67570, 67640, 67710, 67780, 67850, 67920, 67990, 68060, 68130, 68200, 68270, 68340, 68410, 68480, 68550, 68620, 68690, 68760, 68830, 68900, 68970, 69040, 69110, 69180, 69250, 69320, 69390, 69460, 69530, 69600, 69670, 69740, 69810, 69880, 69950, 70020, 70090, 70160, 70230, 70300, 70370, 70440, 70510, 70580, 70650, 70720, 70790, 70860, 70930, 71000, 71070, 71140, 71210, 71280, 71350, 71420, 71490, 71560, 71630, 71700, 71770, 71840, 71910, 71980, 72050, 72120, 72190, 72260, 72330, 72400, 72470, 72540, 72610, 72680, 72750, 72820, 72890, 72960, 73030, 73100, 73170, 73240, 73310, 73380, 73450, 73520, 73590, 73660, 73730, 73800, 73870, 73940, 74010, 74080, 74150, 74220, 74290, 74360, 74430, 74500, 74570, 74640, 74710, 74780, 74850, 74920, 74990, 75060, 75130, 75200, 75270, 75340, 75410, 75480, 75550, 75620, 75690, 75760, 75830, 75900, 75970, 76040, 76110, 76180, 76250, 76320, 76390, 76460, 76530, 76600, 76670, 76740, 76810, 76880, 76950, 77020, 77090, 77160, 77230, 77300, 77370, 77440, 77510, 77580, 77650, 77720, 77790, 77860, 77930, 78000, 78070, 78140, 78210, 78280, 78350, 78420, 78490, 78560, 78630, 78700, 78770, 78840, 78910, 78980, 79050, 79120, 79190, 79260, 79330, 79400, 79470, 79540, 79610, 79680, 79750, 79820, 79890, 79960, 80030, 80100, 80170, 80240, 80310, 80380, 80450, 80520, 80590, 80660, 80730, 80800, 80870, 80940, 81010, 81080, 81150, 81220, 81290, 81360, 81430, 81500, 81570, 81640, 81710, 81780, 81850, 81920, 81990, 82060, 82130, 82200, 82270, 82340, 82410, 82480, 82550, 82620, 82690, 82760, 82830, 82900, 82970, 83040, 83110, 83180, 83250, 83320, 83390, 83460, 83530, 83600, 83670, 83740, 83810, 83880, 83950, 84020, 84090, 84160, 84230, 84300, 84370, 84440, 84510, 84580, 84650, 84720, 84790, 84860, 84930, 85000, 85070, 85140, 85210, 85280, 85350, 85420, 85490, 85560, 85630, 85700, 85770, 85840, 85910, 85980, 86050, 86120, 86190, 86260, 86330, 86400, 86470, 86540, 86610, 86680, 86750, 86820, 86890, 86960, 87030, 87100, 87170, 87240, 87310, 87380, 87450, 87520, 87590, 87660, 87730, 87800, 87870, 87940, 88010, 88080, 88150, 88220, 88290, 88360, 88430, 88500, 88570, 88640, 88710, 88780, 88850, 88920, 88990, 89060, 89130, 89200, 89270, 89340, 89410, 89480, 89550, 89620, 89690, 89760, 89830, 89900, 89970, 90040, 90110, 90180, 90250, 90320, 90390, 90460, 90530, 90600, 90670, 90740, 90810, 90880, 90950, 91020, 91090, 91160, 91230, 91300, 91370, 91440, 91510, 91580, 91650, 91720, 91790, 91860, 91930, 92000, 92070, 92140, 92210, 92280, 92350, 92420, 92490, 92560, 92630, 92700, 92770, 92840, 92910, 92980, 93050, 93120, 93190, 93260, 93330, 93400, 93470, 93540, 93610, 93680, 93750, 93820, 93890, 93960, 94030, 94100, 94170, 94240, 94310, 94380, 94450, 94520, 94590, 94660, 94730, 94800, 94870, 94940, 95010, 95080, 95150, 95220, 95290, 95360, 95430, 95500, 95570, 95640, 95710, 95780, 95850, 95920, 95990, 96060, 96130, 96200, 96270, 96340, 96410, 96480, 96550, 96620, 96690, 96760, 96830, 96900, 96970, 97040, 97110, 97180, 97250, 97320, 97390, 97460, 97530, 97600, 97670, 97740, 97810, 97880, 97950, 98020, 98090, 98160, 98230, 98300, 98370, 98440, 98510, 98580, 98650, 98720, 98790, 98860, 98930, 99000, 99070, 99140, 99210, 99280, 99350, 99420, 99490, 99560, 99630, 99700, 99770, 99840, 99910, 99980, 100050, 100120, 100190, 100260, 100330, 100400, 100470, 100540, 100610, 100680, 100750, 100820, 100890, 100960, 101030, 101100, 101170, 101240, 101310, 101380, 101450, 101520, 101590, 101660, 101730, 101800, 101870, 101940, 102010, 102080, 102150, 102220, 102290, 102360, 102430, 102500, 102570, 102640, 102710, 102780, 102850, 102920, 102990, 103060, 103130, 103200, 103270, 103340, 103410, 103480, 103550, 103620, 103690, 103760, 103830, 103900, 103970, 104040, 104110, 104180, 104250, 104320, 104390, 104460, 104530, 104600, 104670, 104740, 104810, 104880, 104950, 105020, 105090, 105160, 105230, 105300, 105370, 105440, 105510, 105580, 105650, 105720, 105790, 105860, 105930, 106000, 106070, 106140, 106210, 106280, 106350, 106420, 106490, 106560, 106630, 106700, 106770, 106840, 106910, 106980, 107050, 107120, 107190, 107260, 107330, 107400, 107470, 107540, 107610, 107680, 107750, 107820, 107890, 107960, 108030, 108100, 108170, 108240, 108310, 108380, 108450, 108520, 108590, 108660, 108730, 108800, 108870, 108940, 109010, 109080, 109150, 109220, 109290, 109360, 109430, 109500, 109570, 109640, 109710, 109780, 109850, 109920, 110000, 110070, 110140, 110210, 110280, 110350, 110420, 110490, 110560, 110630, 110700, 110770, 11084

CAS7-B 3:605F1 J40 *87E18 WING TOTAL SURFACE(AJW15)

| | | | | | |
|--------|------|--------|------|--------|-----------------------------|
| SYMBOL | 27 B | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | 10.015 | .165 | M B | .000 P ₀ P 1.000 |
| △ | .334 | | | ELEVON | .286 80° AD -18.000 |
| □ | .570 | | | | |
| ◇ | .663 | | | | |
| ○ | .873 | | | | |

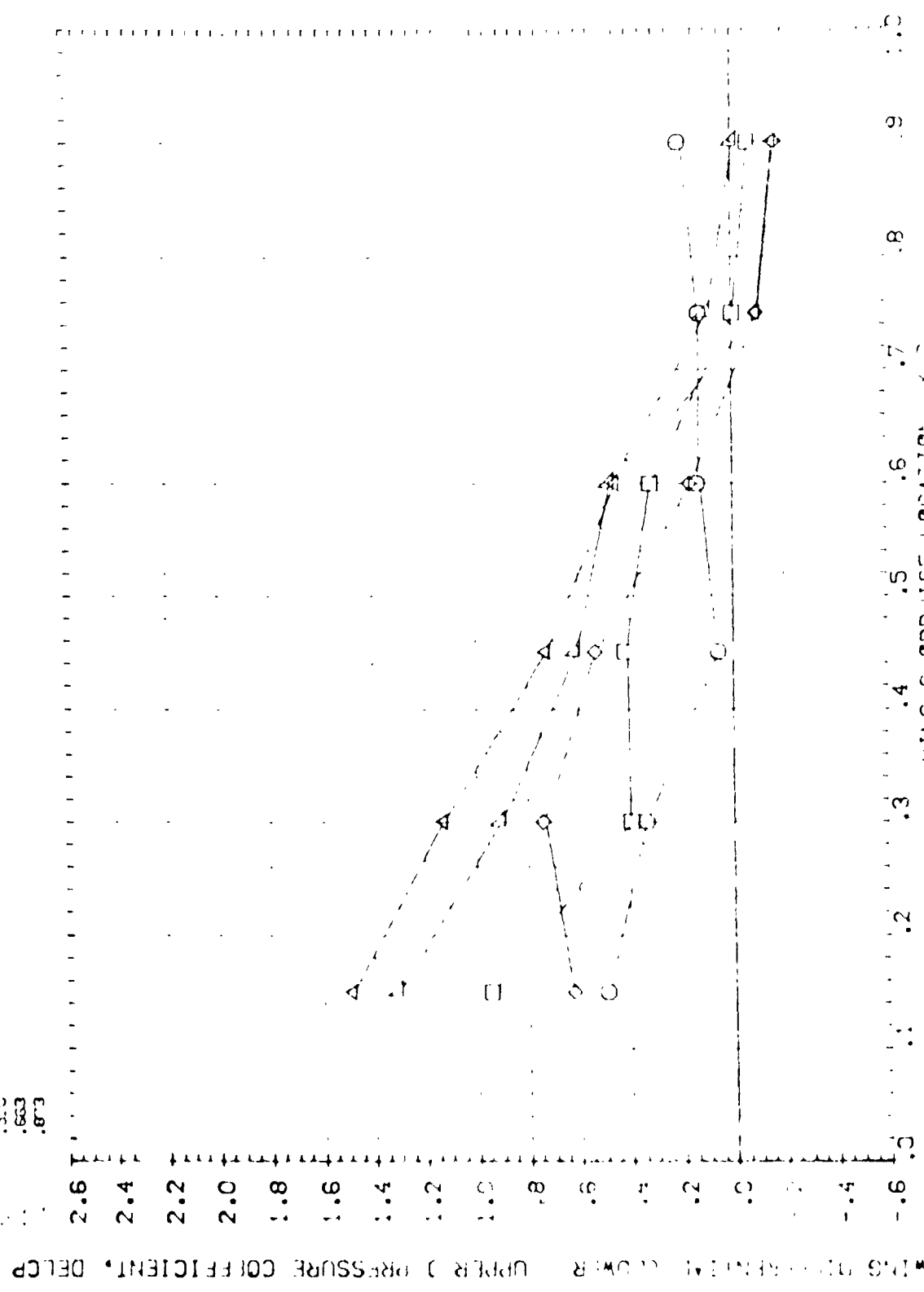
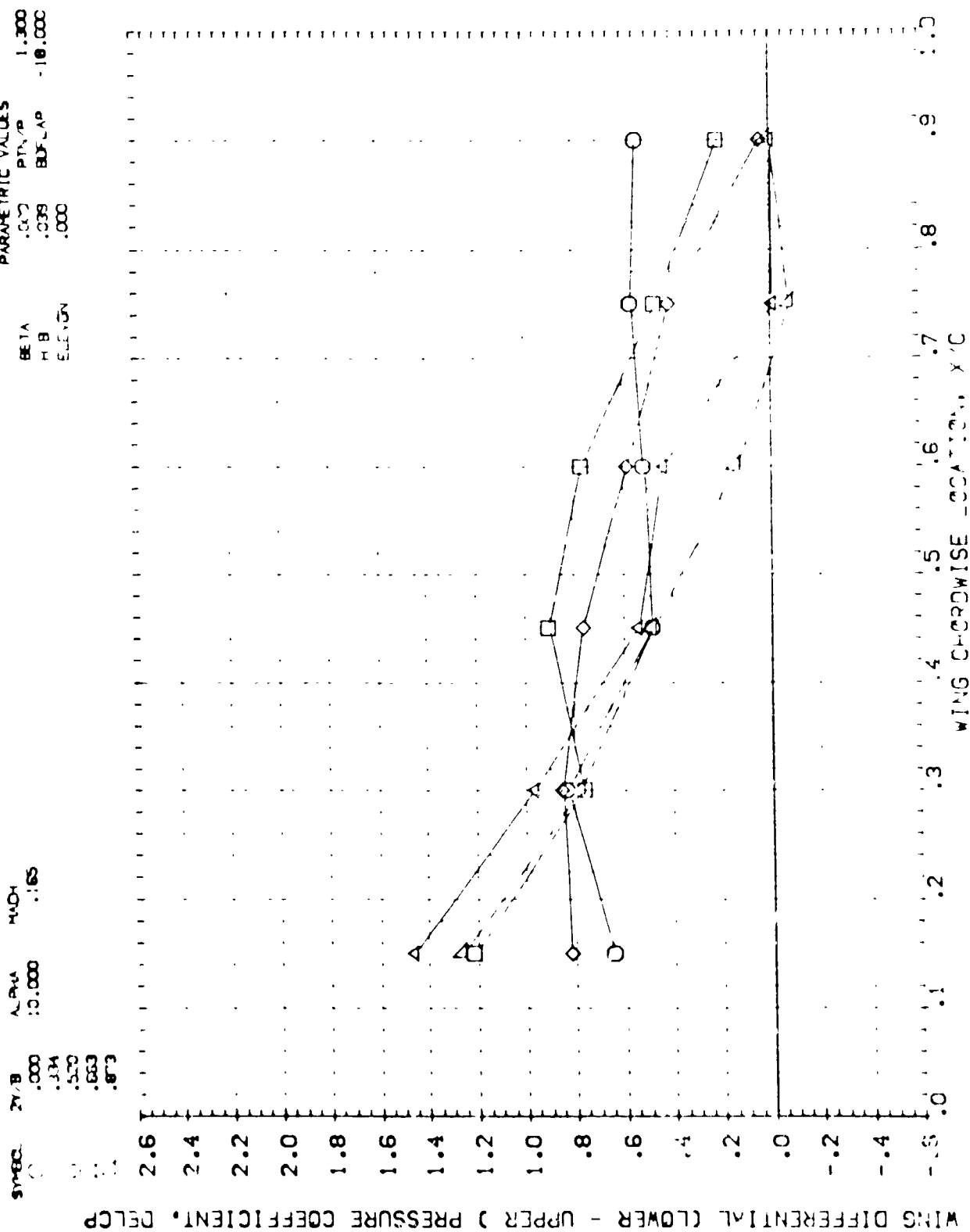


FIG 86 WING SURFACE TOTAL PRESSURE COEFFICIENT, DELCP



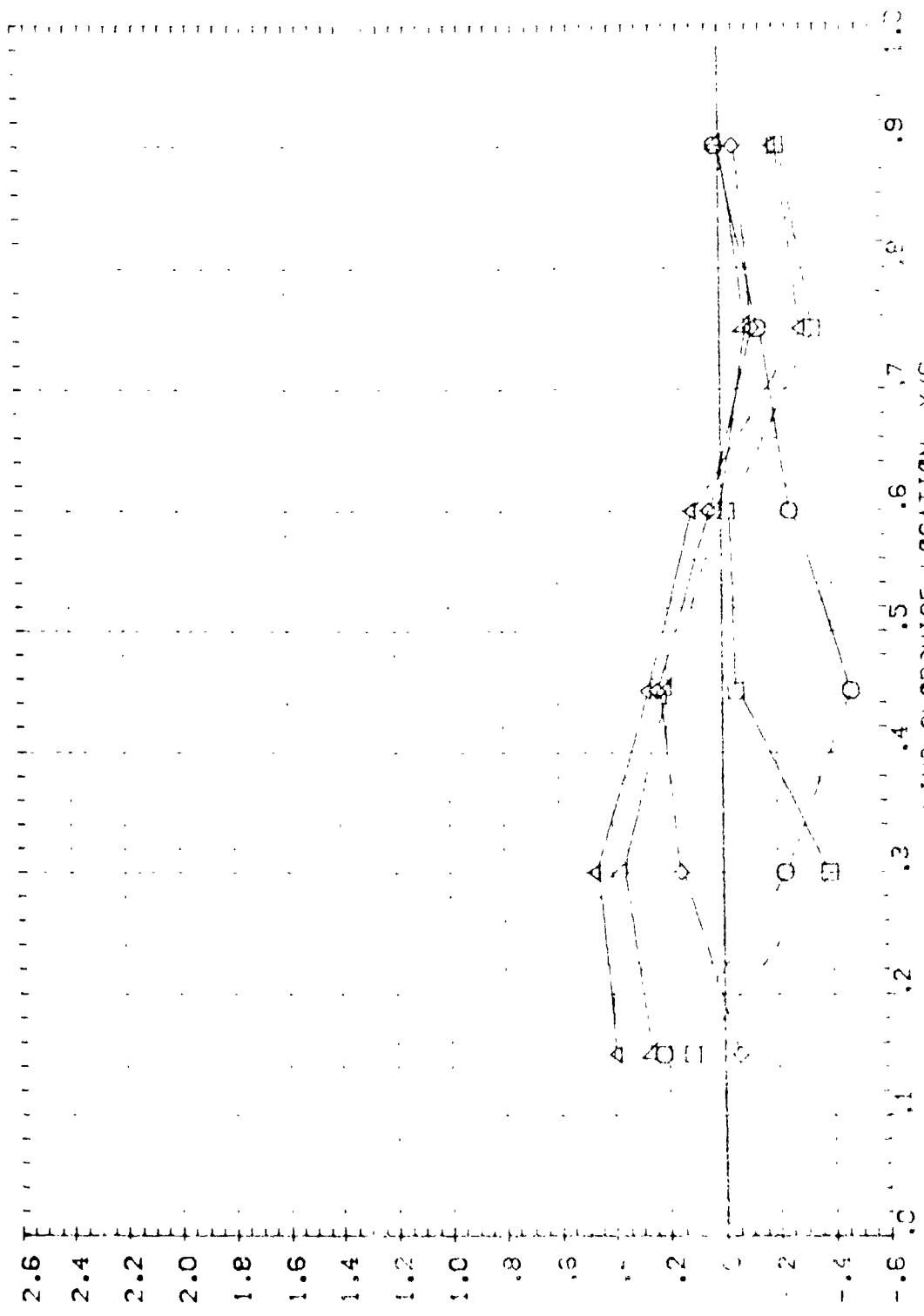
| PARAMETRIC VALUES | |
|-------------------|---------|
| BETA | .000 |
| H B | .039 |
| ELEVATION | .000 |
| | PTN/P |
| | 1.300 |
| | -10.000 |
| | BDF/LAP |

[illegible]

0457-3 81605F: J40 #87E18 WING TOTAL SURFACE (AD, #07)

| | | | | | |
|--------|------|-------|------|--------|-------------------|
| SYMBOL | 27/B | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| | .000 | .005 | .165 | H B | .000 |
| | .334 | | | ELEVON | .000 |
| | .500 | | | | |
| | .603 | | | | |
| | .873 | | | | |

WING D. FRONTAL COEFF - UPPER 3 PRESSURE COEFFICIENT, DELCP



WING CHORDWISE LOCATION, X/C

FIG 87 WING D. FRONTAL PRESSURE COEFFICIENT, DELCP WITH J40. PTW=1.3, C.E.=0.01



0A57-B 916C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW07)

| | | | | | |
|--------|------|-------|------|--------|---------------------|
| SYMBOL | 21/B | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | 9.975 | .165 | H/B | .000 PTN/P 1.300 |
| △ | .334 | | | ELEVON | .125 BOFLAP -18.000 |
| □ | .570 | | | | .000 |
| ◇ | .663 | | | | |
| ▽ | .873 | | | | |

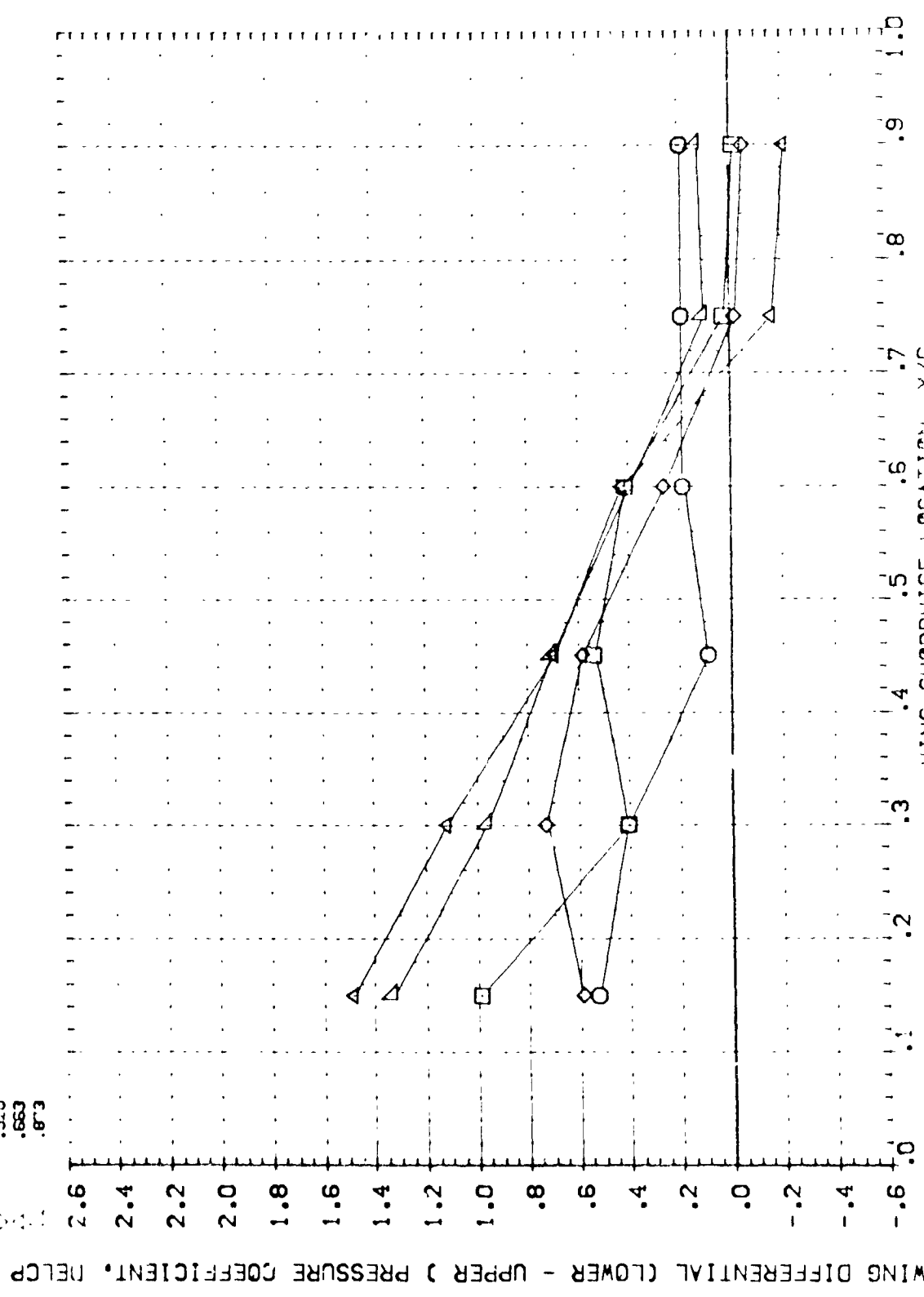


FIG 87 WING DIFFERENTIAL PRESSURE COEFFICIENT WITH 140, PTN/P=1.3, 0 ELEVON

0457-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADW177)

BETA
H/B
ELEVON

PARAMETRIC VALUES:
PTN/P
BOFLAP

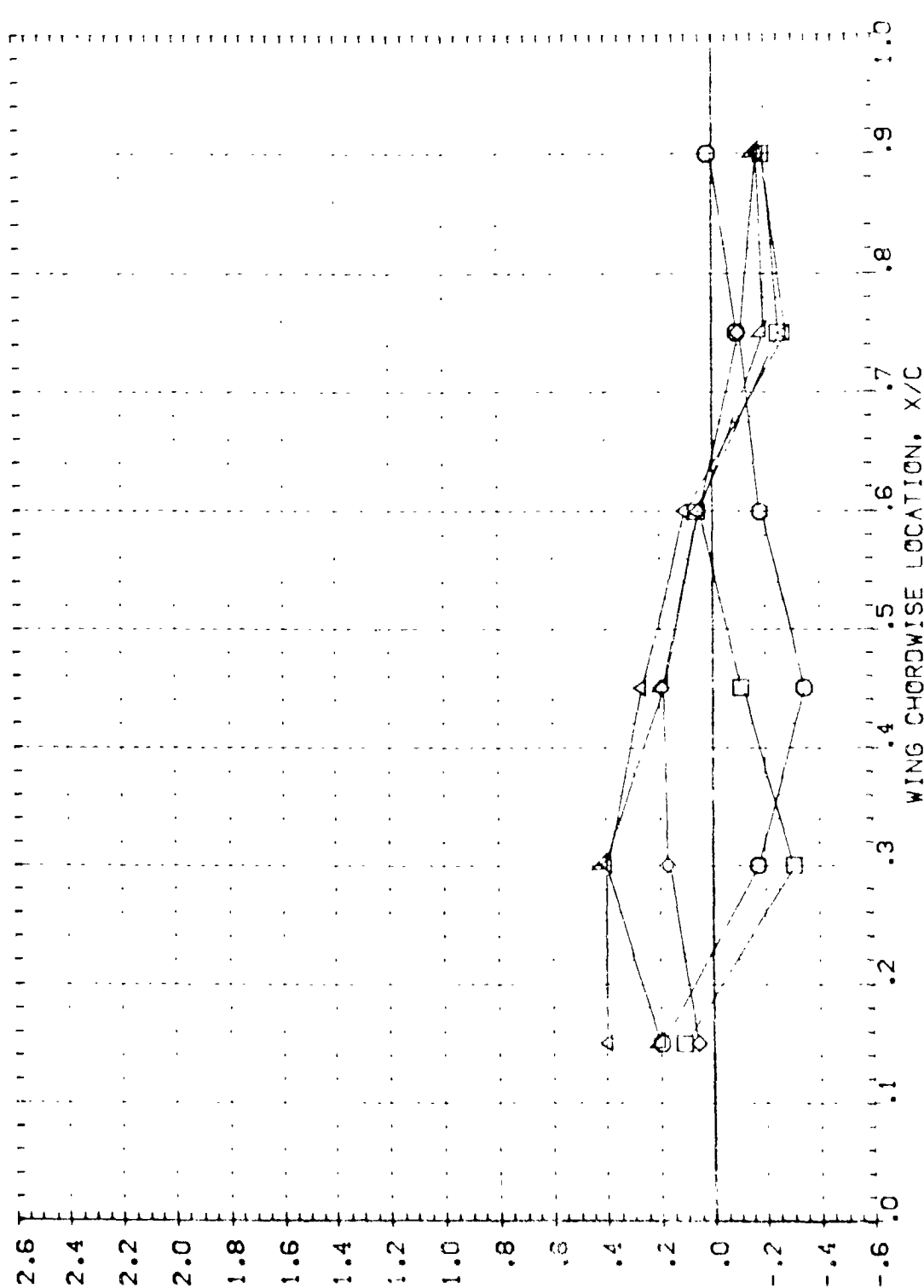
1.300
-18.000

SYMBOL
Z
B
ALPHA
MACH

.005
.165

.000
.334
.520
.633
.873

WING DIFFERENTIAL CLOWER - UPPER) PRESSURE COEFFICIENT, DELCP



WING CHORDWISE LOCATION, X/C

FIG 87 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 0 ELE ON

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW17)

| | | | | | | |
|--------|------|-------|------|--------|--------|---------|
| SYMBOL | 2Y/B | ALPHA | MACH | BETA | PTN/P | 1.300 |
| | .000 | 9.975 | .165 | H/R | BOFLAP | -18.000 |
| | .331 | | | ELEVON | | |
| | .520 | | | | | |
| | .653 | | | | | |
| | .873 | | | | | |

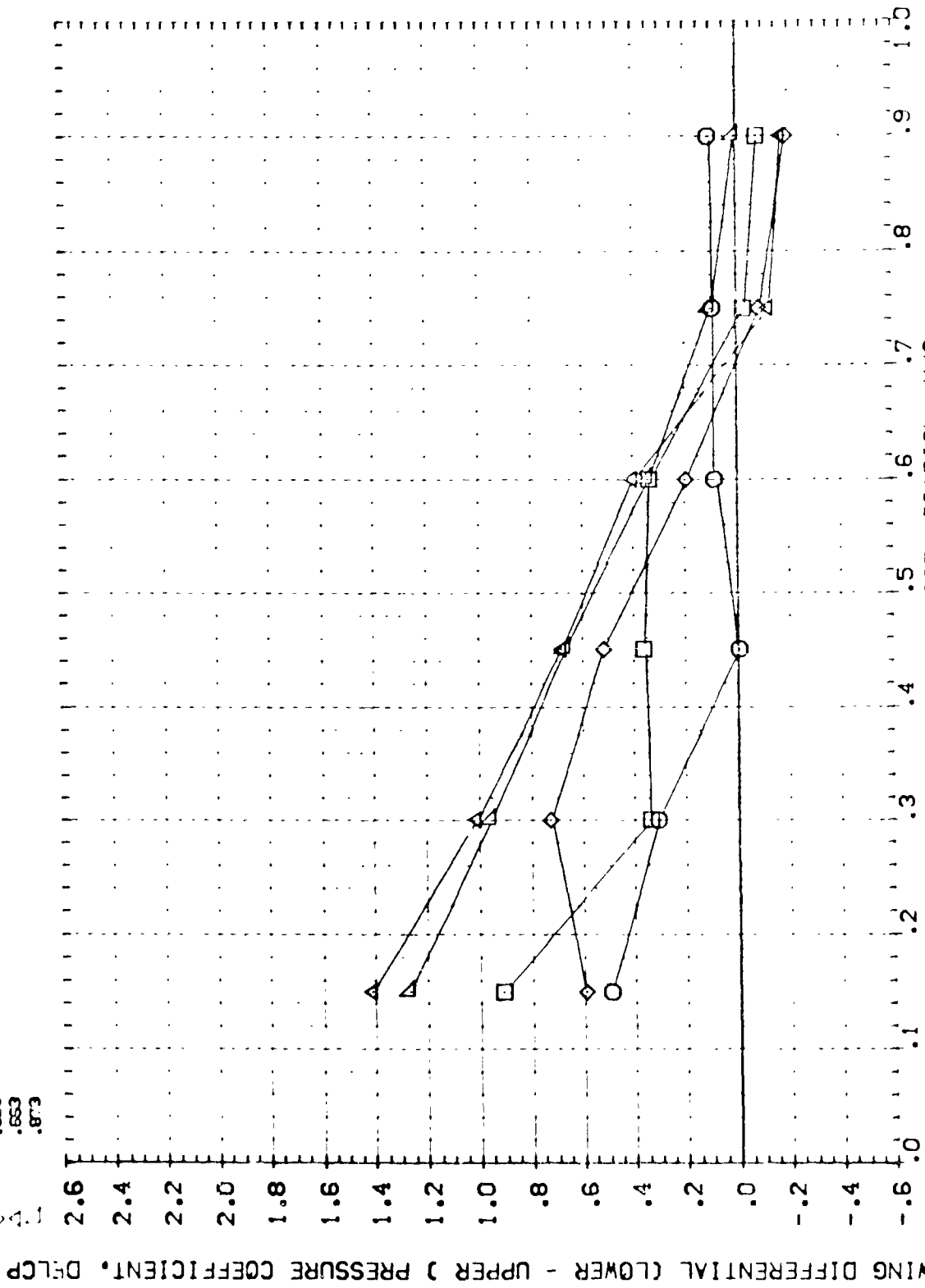


FIG 87 WING DIFFERENTIAL PRESSURE COEFFICIENT, DELCP vs. WING CHORDWISE LOCATION, X/C

0A57-3 B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW05)

| | | | | | |
|--------|------|-------|------|--------|-------------------------|
| SYMBOL | 27.8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | 9.990 | .165 | H/B | .000 P _{T/N} P |
| ◇ | .334 | | | ELEVON | .039 90° LAR |
| □ | .570 | | | | .000 |
| △ | .663 | | | | |
| ▽ | .873 | | | | |

WING DIFFERENTIAL COEFF - UPPER 2 PRESSURE COEFFICIENT, DELCP

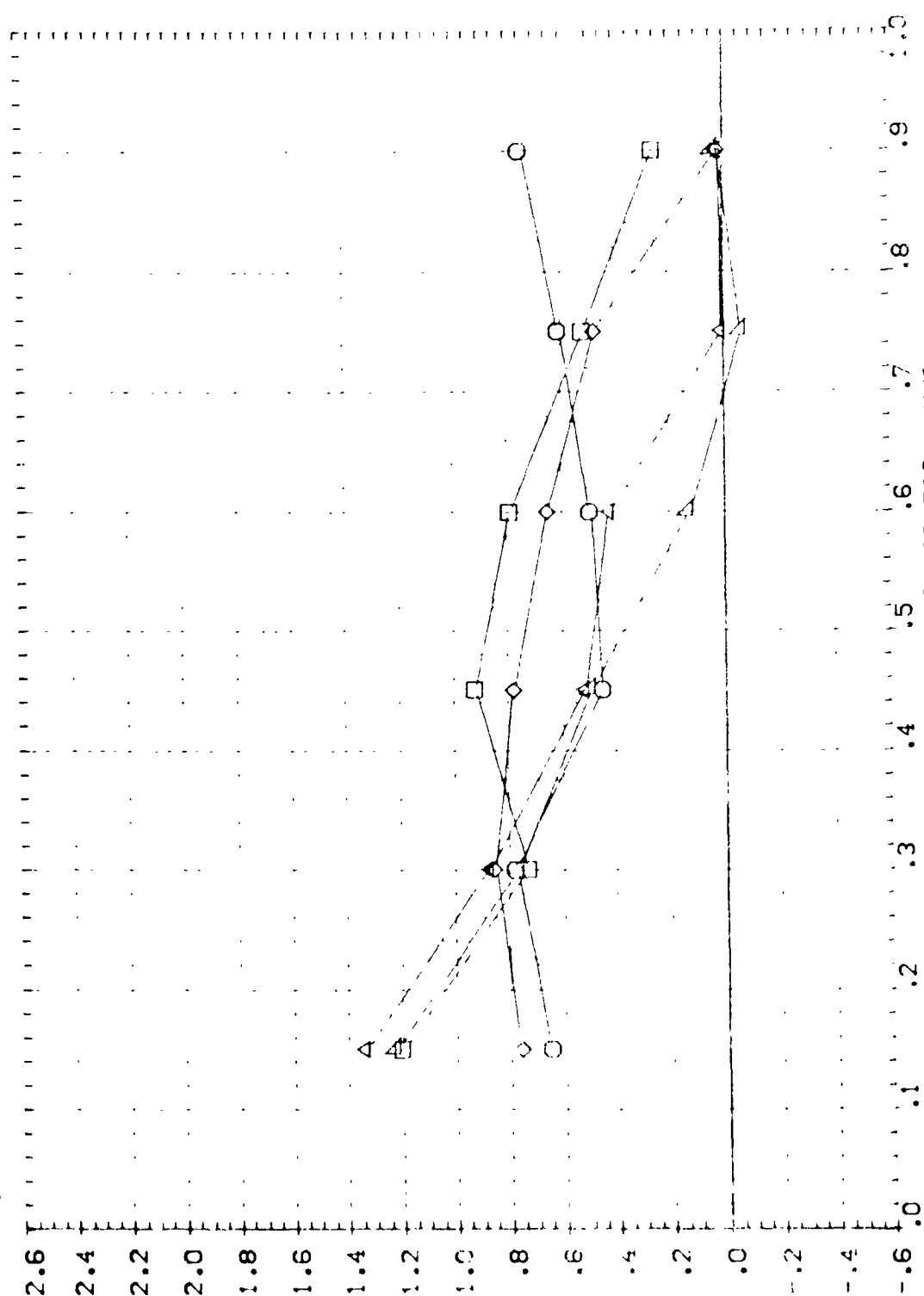


FIG 88 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, 27.8 P=1.5, 0 ELE ON

0A57-B 816C5F1 J40 W87E18 WING TOTAL SURFACE (ADW08)

| | | | | | | |
|--------|------|-------|------|--------|---------|---------|
| SYMBOL | 2N/B | ALPHA | MACH | BETA | PTN/P | 1.500 |
| ○ | .000 | -.000 | .165 | P/B | BD/FLAP | -18.000 |
| ◇ | .334 | | | ELEVON | | |
| □ | .500 | | | | | |
| △ | .663 | | | | | |
| ▽ | .873 | | | | | |

WING DIFFERENTIAL (LOWER - UPPER) PRESSURE COEFFICIENT, DELCP

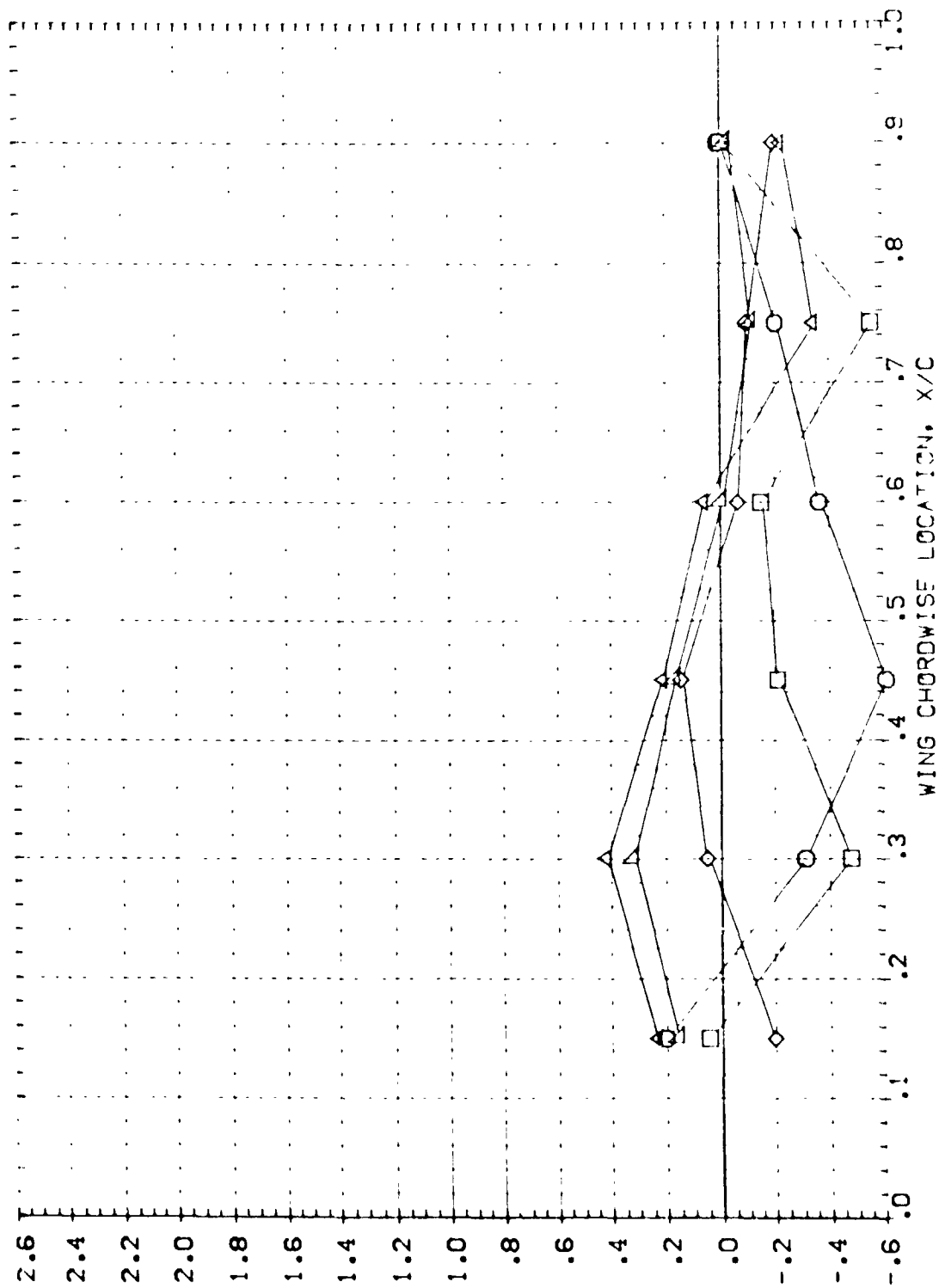


FIG 88 WING DIFFERENTIAL PRESSURE COEFFICIENTS WITH J40, PTN/P=1.5, 0 ELEVON

0457-B 81605F1 J40 W87E18 WING TOTAL SURFACE (ADW08)

PARAMETRIC VALUES
 BETA .000 1,500
 H/B .125 18,000
 ELEVON .000

SYMBOL 2V/B ALPHA MACH
 .000 9.980 .165
 .334
 .573
 .663
 .873

WING TOTAL SURFACE (ADW08) UPPER - UPPER 2 PRESSURE COEFFICIENT, DELCP

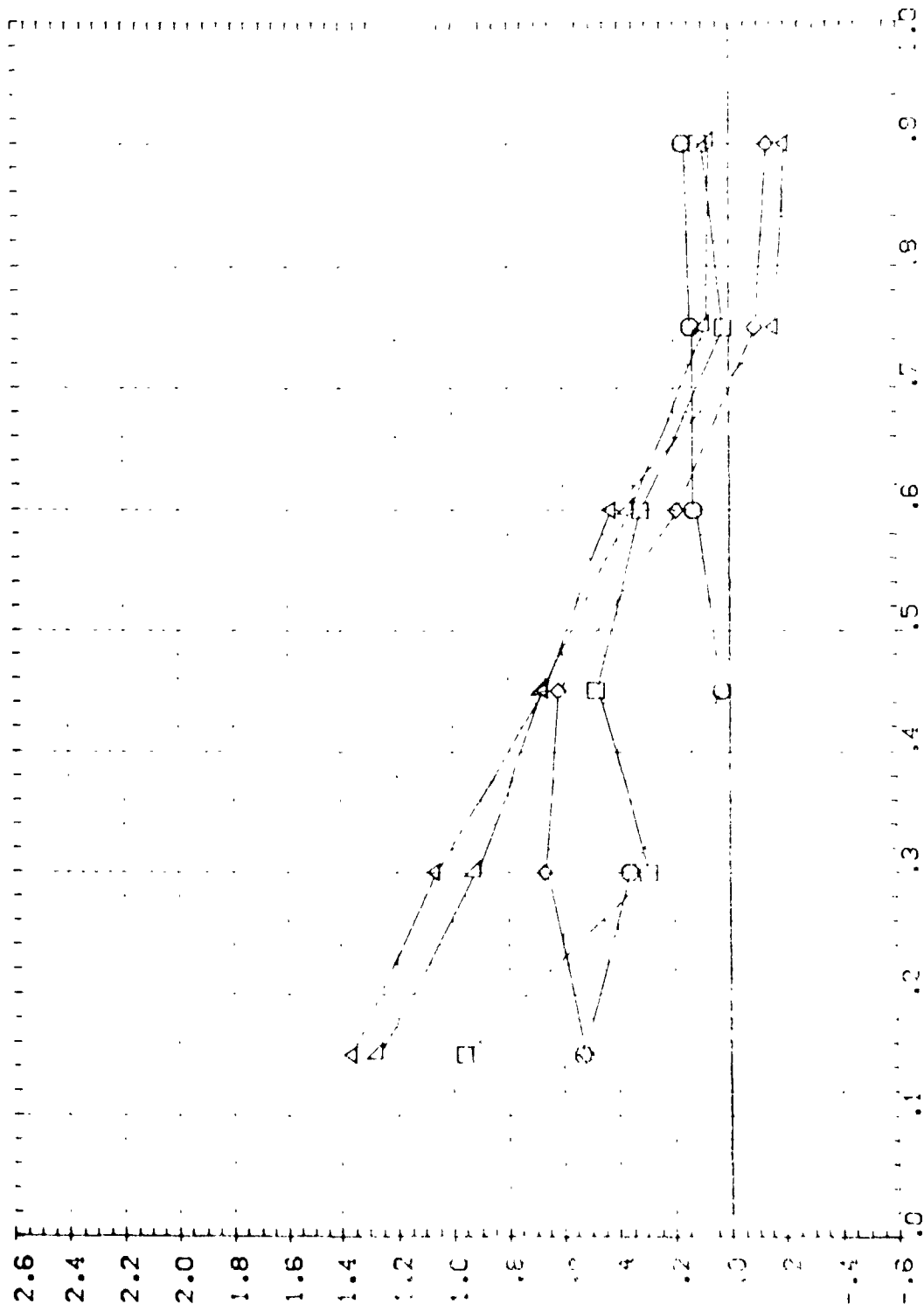


FIG 88 WING TOTAL SURFACE (ADW08) UPPER - UPPER 2 PRESSURE COEFFICIENT, DELCP

0A57-B 3:6C5E1 J40 W87E18 WING TOTAL SURFACE(ADW16)

| | | | | | | | |
|--------|------|-------|------|------|-------|--------|--------|
| SYMBOL | 21/B | ALPHA | MACH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | .015 | .165 | .000 | 1.500 | | |
| △ | .304 | | | .000 | | | |
| □ | .520 | | | .000 | | | |
| ◇ | .663 | | | | | | |
| ○ | .873 | | | | | | |

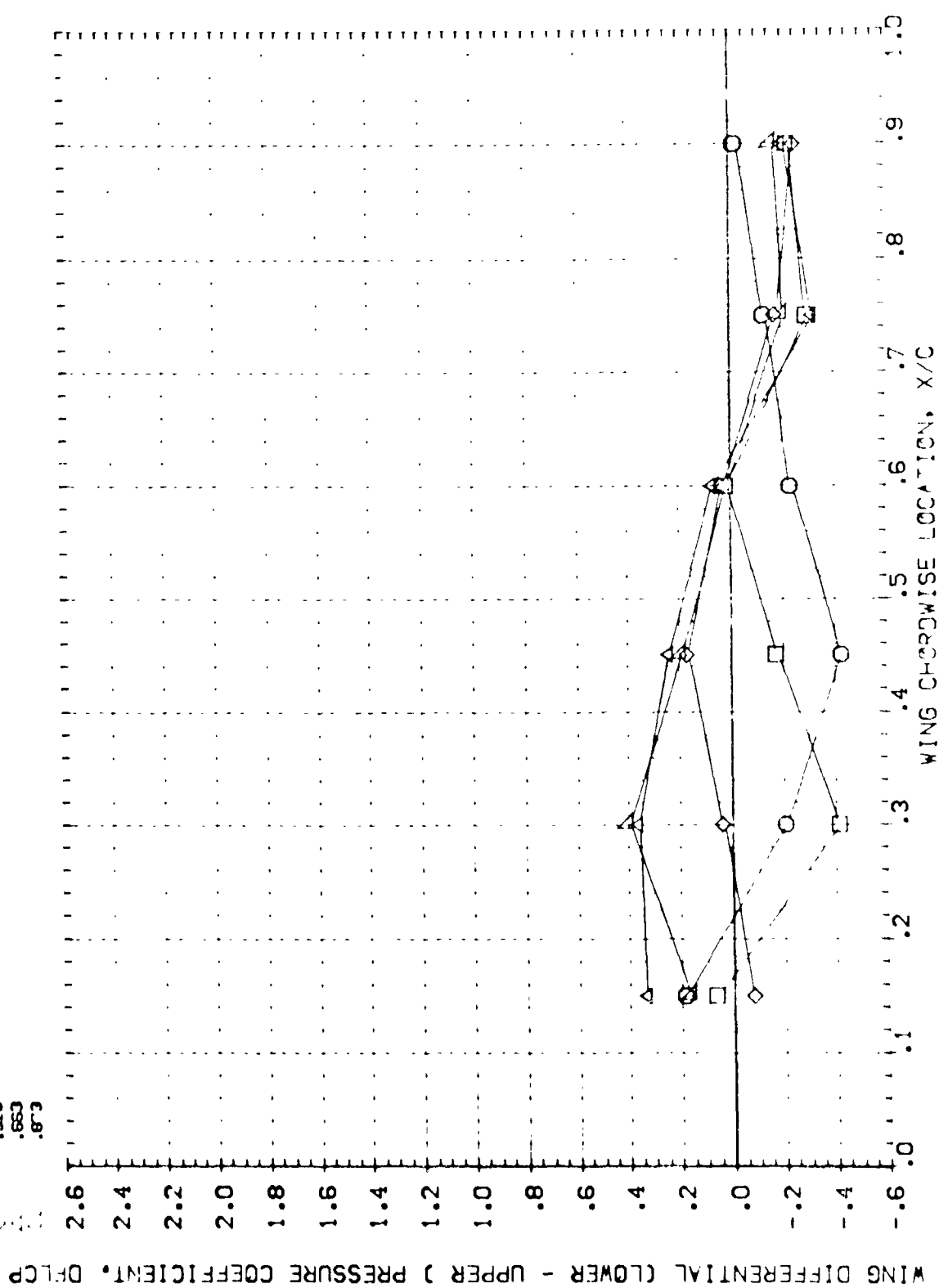


FIG 88 WING DIFFERENTIAL PRESSURE COEFFICIENT WITH 1.40, PTN/P=1.5, 0 ELEVON

CAS7-B 31605F: J40 W87E18 WING TOTAL SURFACE (AD/W33)
 SYMBOL ZY/B ALPHA MACH
 0 .000 10.005 .165
 1 .334
 2 .520
 3 .663
 4 .873

PARAMETRIC VALUES
 BETA .000
 H/B .039
 ELEVOR 15.00'
 PITCH 1.000
 BOFLAP -18.000

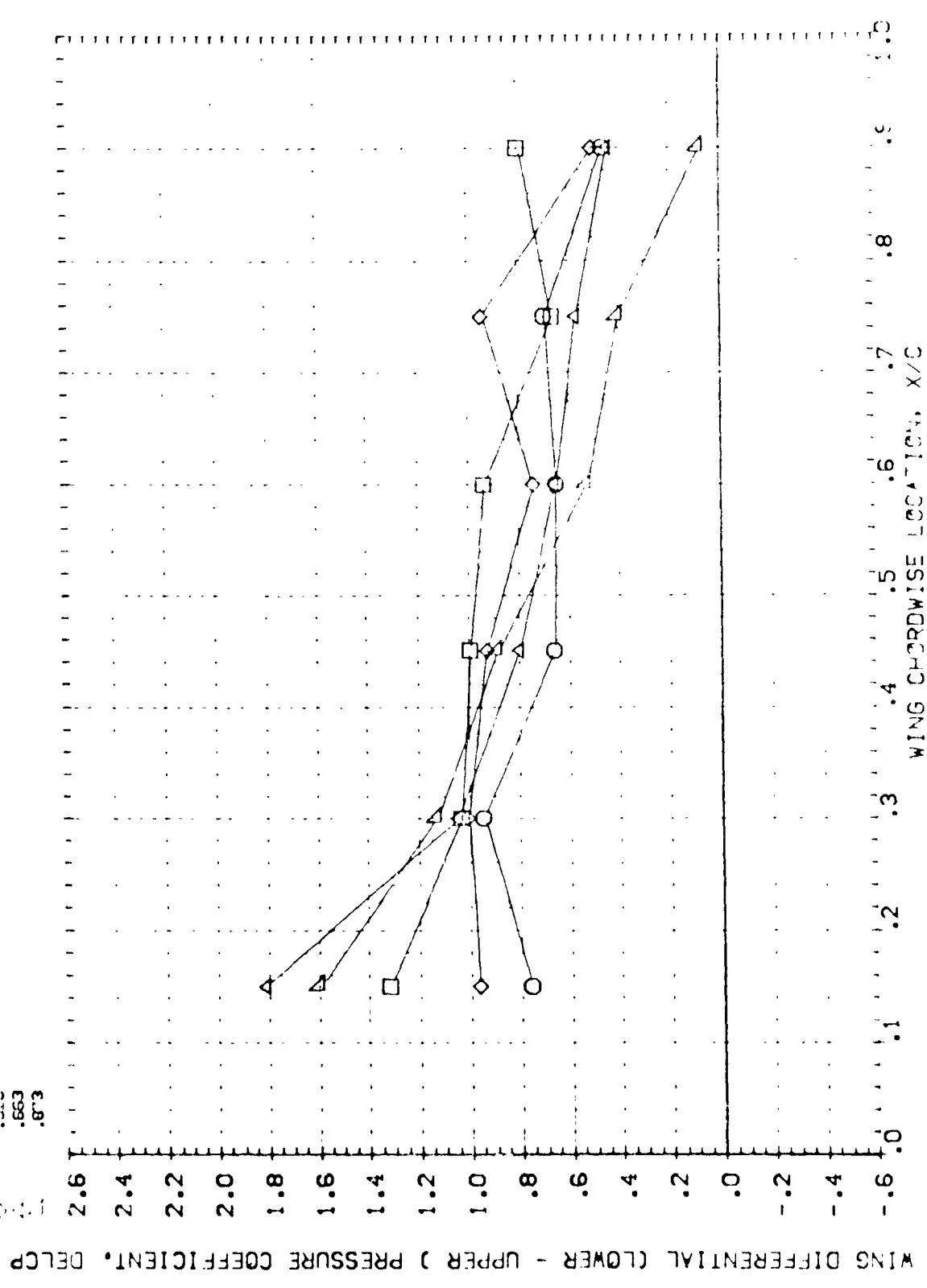
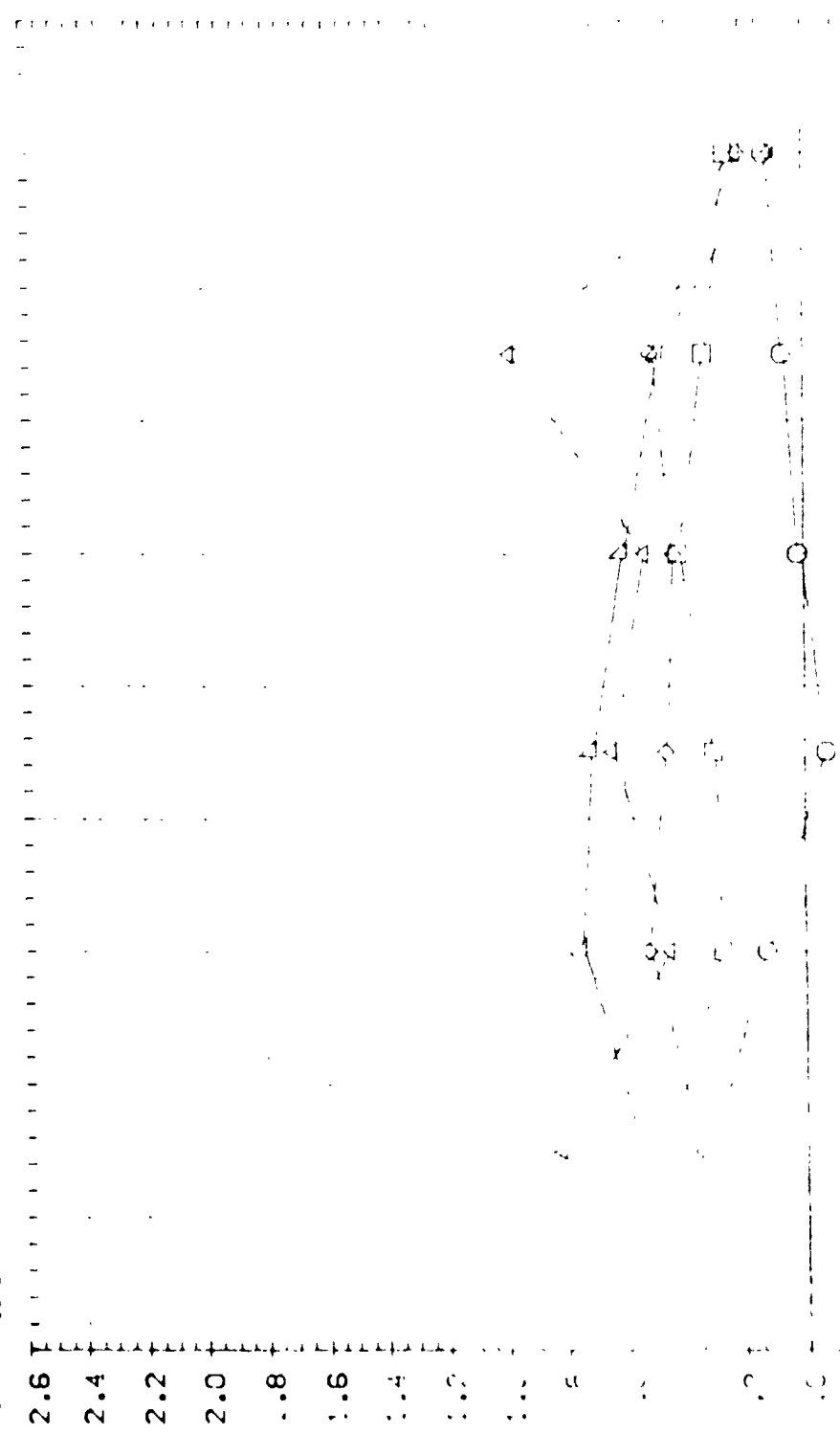


FIG 89 WING DIFFERENTIAL PRESSURE COEFFICIENT, DELCP, VS. WING CHORDWISE LOCATION, X/C
 31

0157-3 3:605E: 040 *8TE:8 WING TOTAL SURFACE (A0.130)

| | | | | | |
|--------|------|-------|------|--------|-------------------|
| SYMBOL | 27 B | ALPHA | WAO | BETA | PARAMETRIC VALUES |
| | .300 | -.000 | .165 | H B | .000 |
| | .334 | | | ELEVON | .125 |
| | .500 | | | | .000 |
| | .663 | | | | 18.000 |
| | .873 | | | | |

* WING TOTAL SURFACE COEFFICIENT, DELCP



WING CHORDWISE LOCATION, X/C

89 WING CHORDWISE LOCATION, X/C

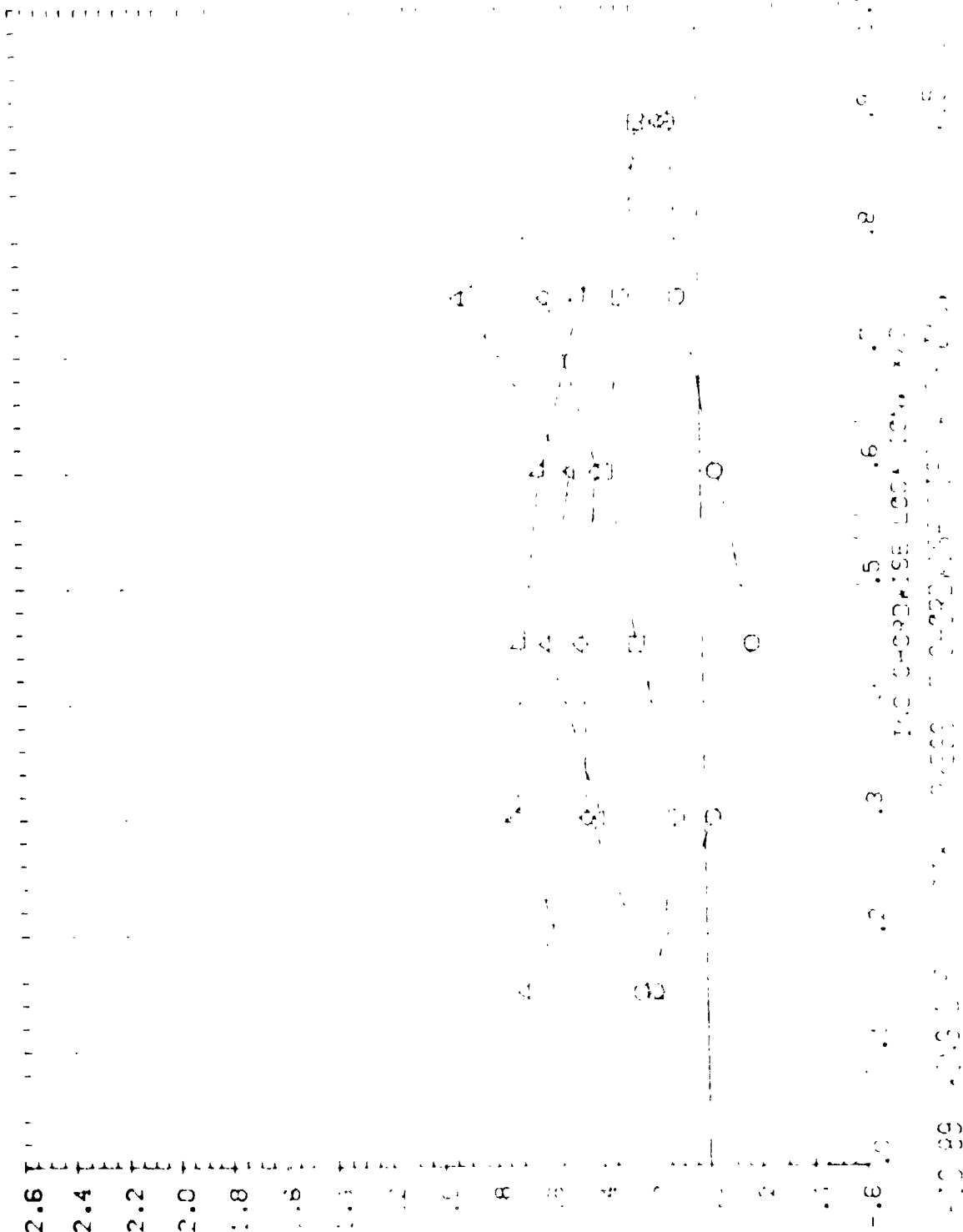
5. The use of the ESTACCO process within the GIC 68 Committee

0157-3 316054: J40 *87E18 *116 TOTAL SURFACE (ADP35)

PARAMETRIC VALUES
 BETA 1.000 07N 0 1.300
 1.9 1.706 90E 10 -18.000
 ELEV 15.000

SYMBOL 27 9 1.000 1.000 1.000
 .334 .570 .603 .873
 .165

* TOTAL SURFACE COEFFICIENT, DEL CP

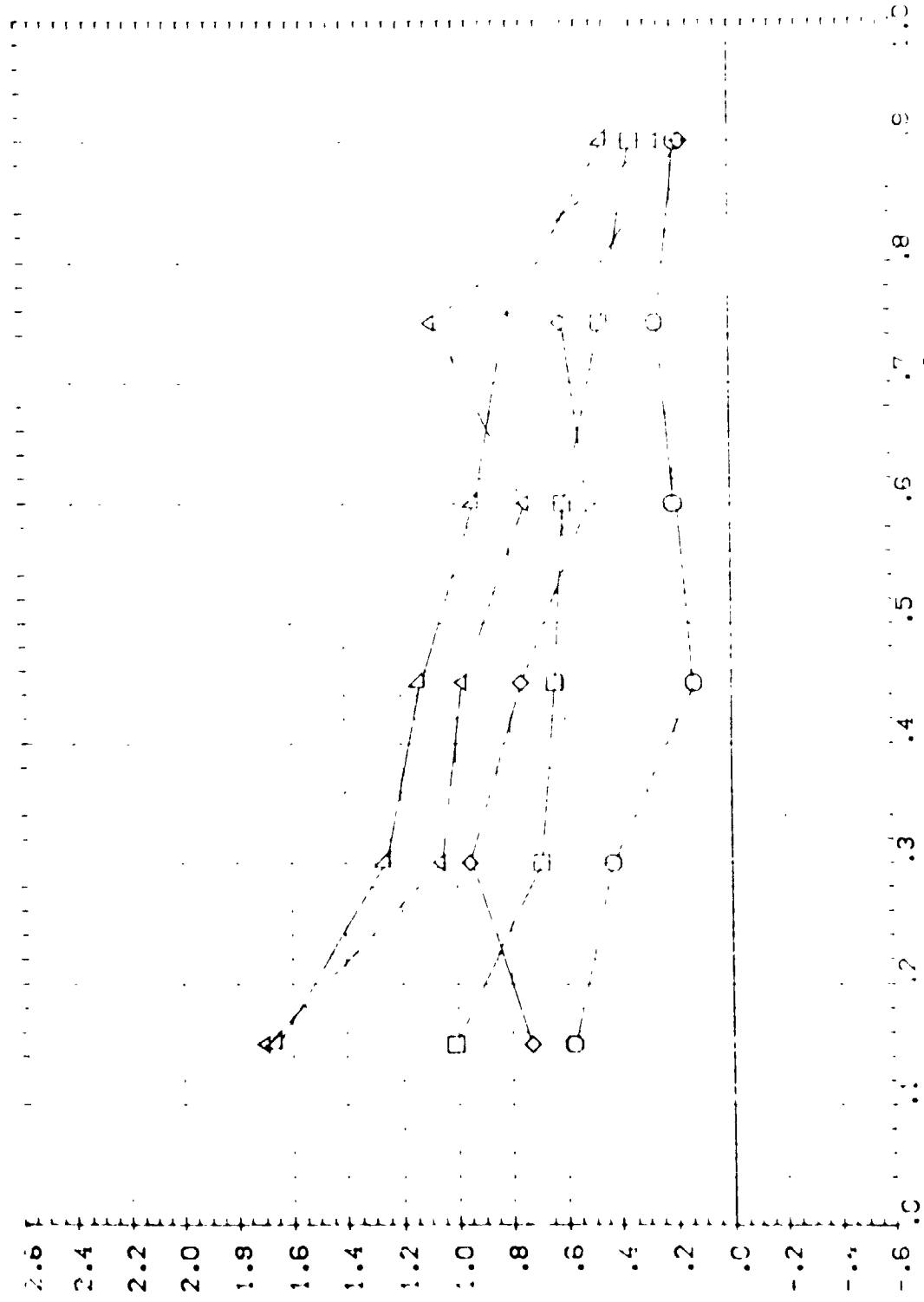


0457-3 31605F: J40 *87E18 WING TOTAL SURFACE (A W35)

PARAMETRIC VALUES
 BETA .000 P₀, P 1.300
 M₀ .786 BD AP -18.000
 ELEV 15.000

SYMBOL 20/9 L₀MA 1404
 .000 9.985
 .304
 .500
 .633
 .879

WING DIFFERENTIAL (LOWER - UPPER) PRESSURE COEFFICIENT, CLCP



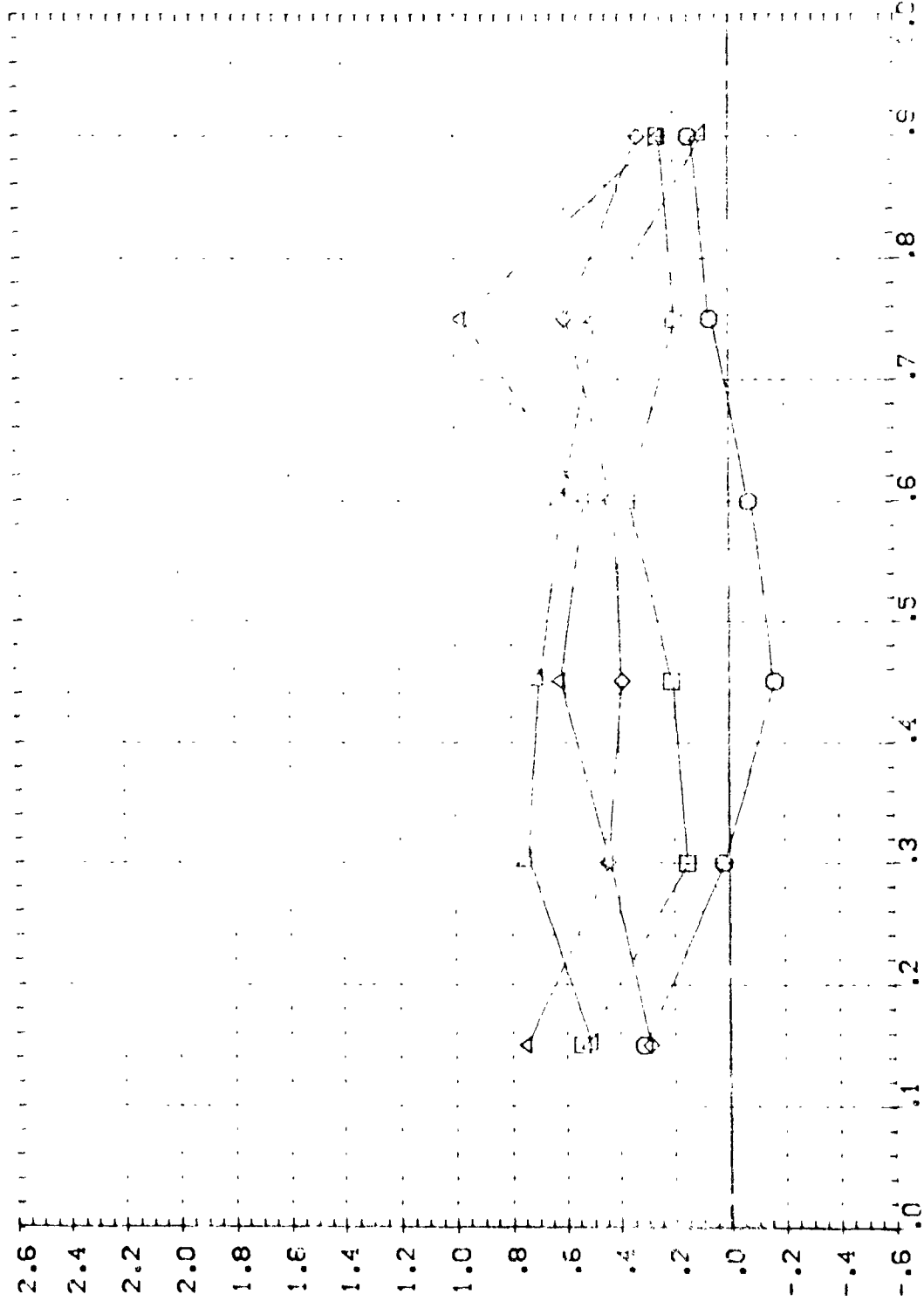
WING CHORDWISE LOCATION, X/C

FIG 80 WING DIFFERENTIAL PRESSURE COEFFICIENT, CLCP, WING TOTAL SURFACE (A W35)

0457-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW28)

| | | | | | |
|--------|------|--------|------|--------|-------------------------|
| SYMBOL | ZN B | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | -1.000 | .165 | 1/8 | .000 P _{TN} /P |
| △ | .334 | | | 1/8 | .125 90° AP |
| □ | .570 | | | ELEVON | 15.000 |
| ◇ | .653 | | | | |
| ● | .873 | | | | |

WING DIFFERENTIAL (LOWER - UPPER) PRESSURE COEFFICIENT, D/LCP



WING CHORDWISE LOCATION, X/C

FIG 90 WING DIFFERENTIAL PRESSURE COEFFICIENT

WING CHORDWISE LOCATION, X/C
P_{TN}/P = 1.000
ELEVON

CAS-3 316051 040 48"E18 KING TOTAL 6,274,290

PAID 412 12 15
100 10 15
100 10 15
100 10 15

5-40 2-
100 10 15
100 10 15
100 10 15
100 10 15

100 10 15
100 10 15
100 10 15
100 10 15

100 10 15
100 10 15
100 10 15
100 10 15

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW35)

| SYMBOL | 2N/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|---------|
| | | | | BETA | PTN/P | BOFLAP | ELEVON |
| □ | .000 | -.020 | .165 | .000 | .000 | 15.000 | 1.300 |
| ◇ | .304 | | | .286 | | | -18.000 |
| △ | .520 | | | | | | |
| ○ | .663 | | | | | | |
| □ | .873 | | | | | | |

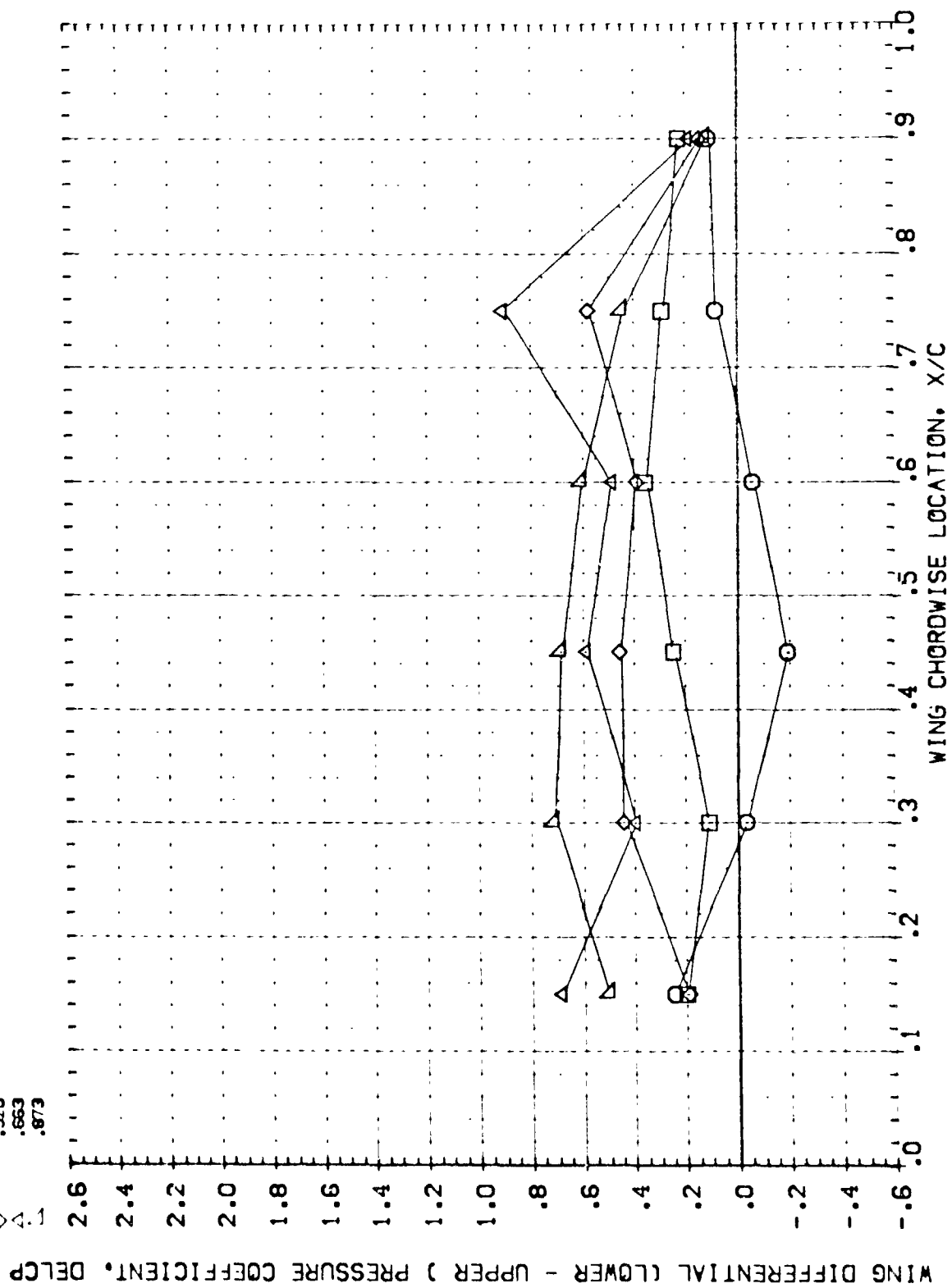


FIG 90 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADWV35)

| SYMBOL | 2 γ /8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
|--------|---------------|-------|------|--------|-------------------|
| △ | .000 | 9.985 | .165 | H/8 | .000 PTN/P |
| ▽ | .334 | | | ELEVON | .286 BOFLAP |
| ◇ | .520 | | | | 15.000 |
| □ | .653 | | | | |
| ○ | .873 | | | | |

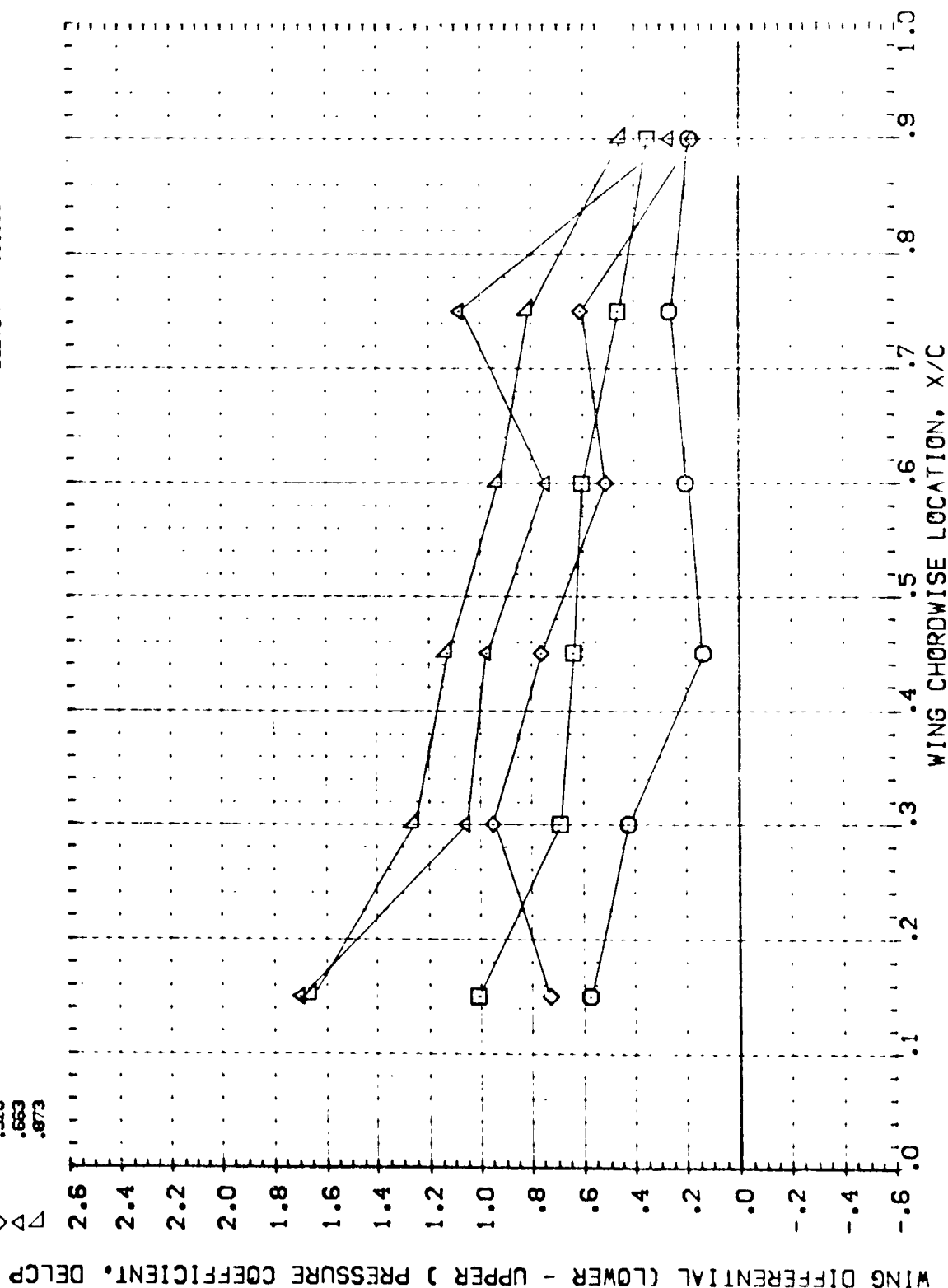


FIG 90 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.3, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE(ADVW31)

| | | | | | | |
|--------|---------------|--------|------|-------------------|--------|---------|
| SYMBOL | 2 γ /B | ALPHA | MACH | PARAMETRIC VALUES | | |
| ◇ | .000 | 10.010 | .165 | BETA | PTN/P | 1.500 |
| △ | .304 | | | H/B | BOFLAP | -10.000 |
| □ | .520 | | | ELEVON | | 15.000 |
| ○ | .653 | | | | | |
| ▽ | .873 | | | | | |

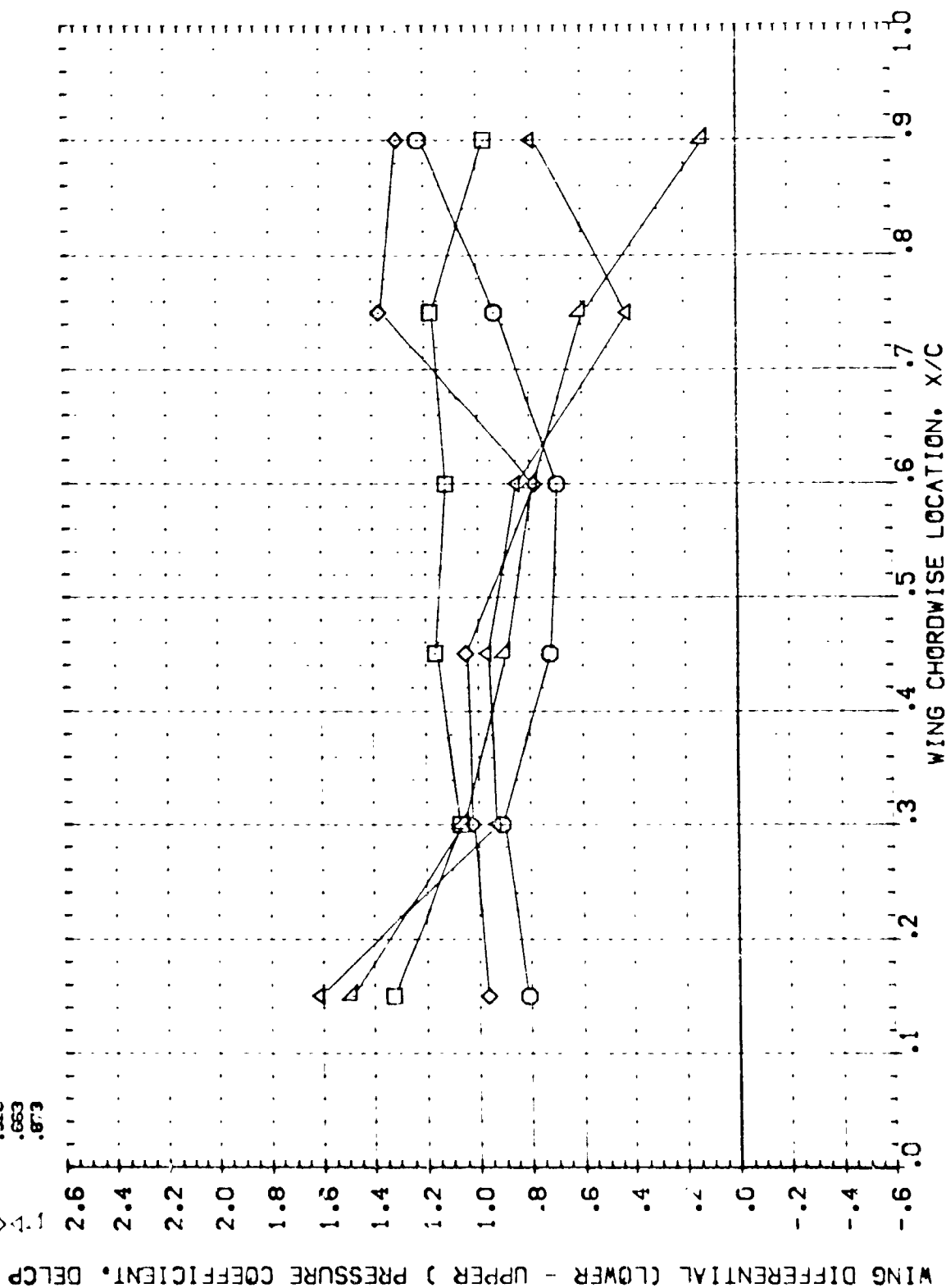


FIG 91 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW28)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .125 BDFLAP -10.000
 ELEVON 15.000

SYNTH 21/8 ALPHA MACH
 .000 -.020 .165
 .304
 .520
 .663
 .873

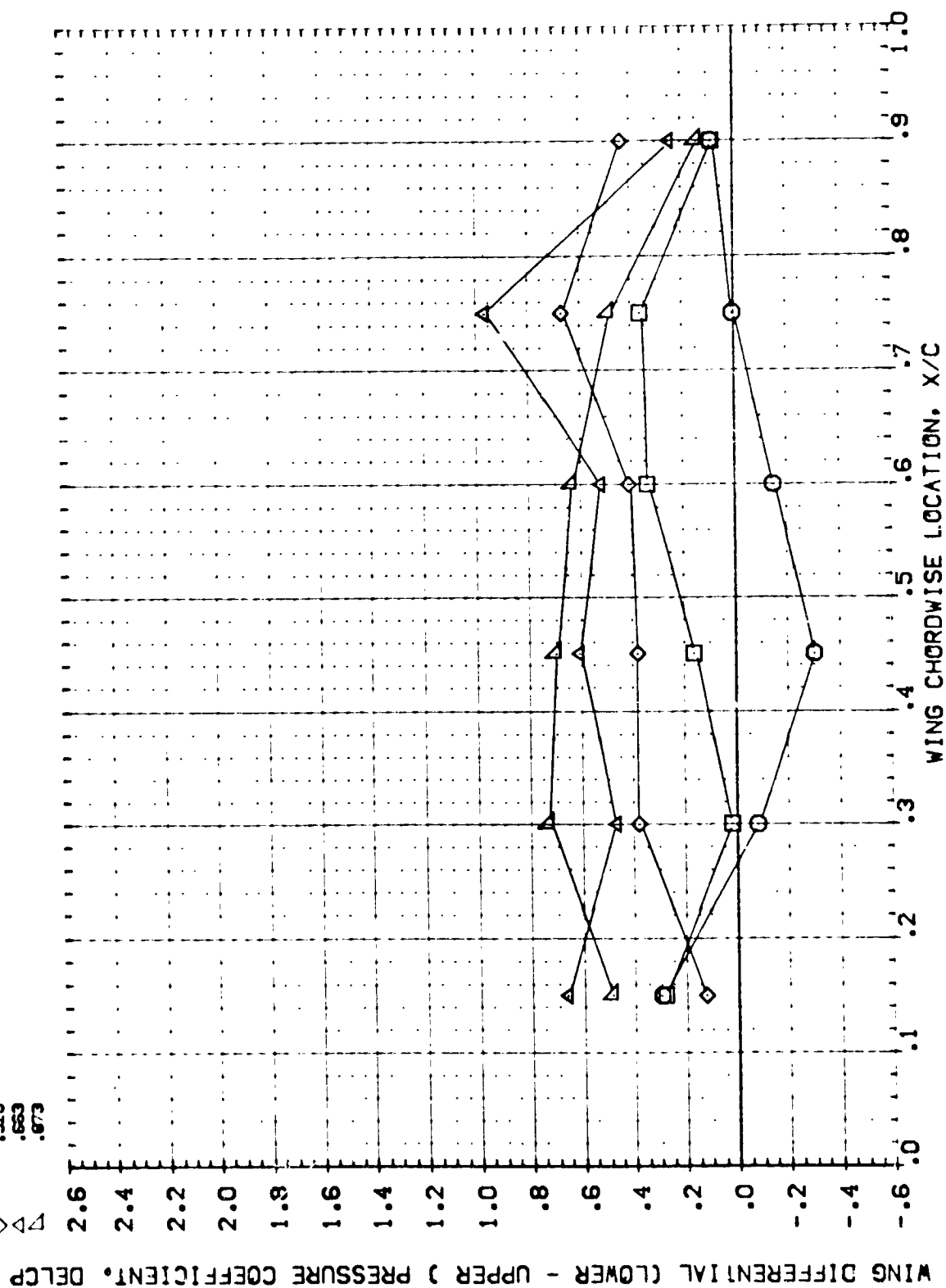


FIG 91 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADVW28)

| SYMBOL | 2 γ /8 | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|---------------|-------|------|-------------------|-----------------|--------|--|
| | | | | BETA H/8 | PTN/P BOFLAP | ELEVON | |
| 1.0 | .000 | 9.965 | .165 | .000 | 1.500 | 15.000 | |
| 1.4 | .304 | | | .125 | | | |
| 1.8 | .520 | | | | | | |
| 2.2 | .653 | | | | | | |
| 2.6 | .873 | | | | | | |

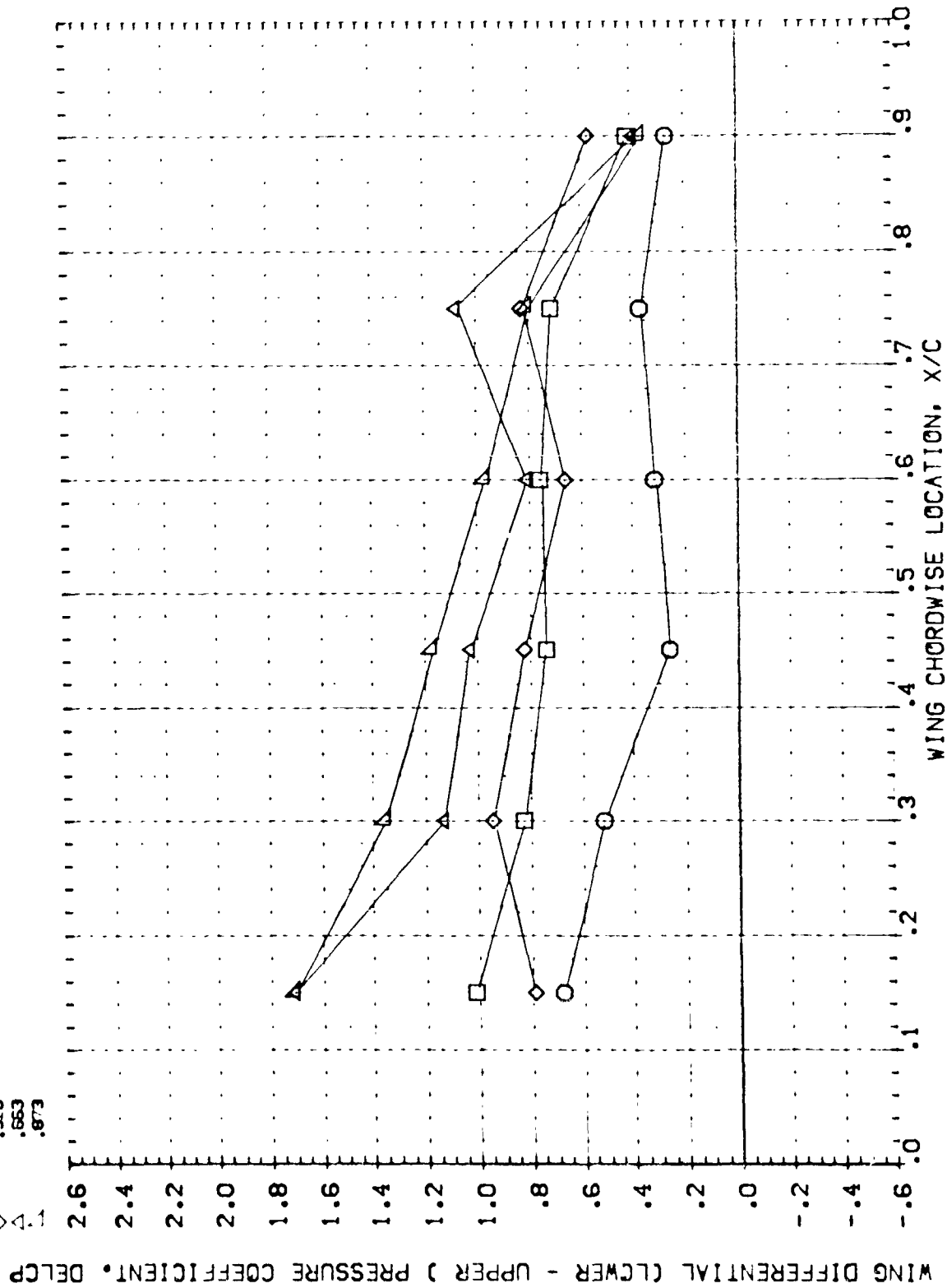


FIG 91 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE (ADW34)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .286 BOFLAP -18.000
 ELEVON 15.000

SYMBOL 21/8 ALPHA MACH
 .000 -.010 .165
 .334
 .520
 .663
 .873

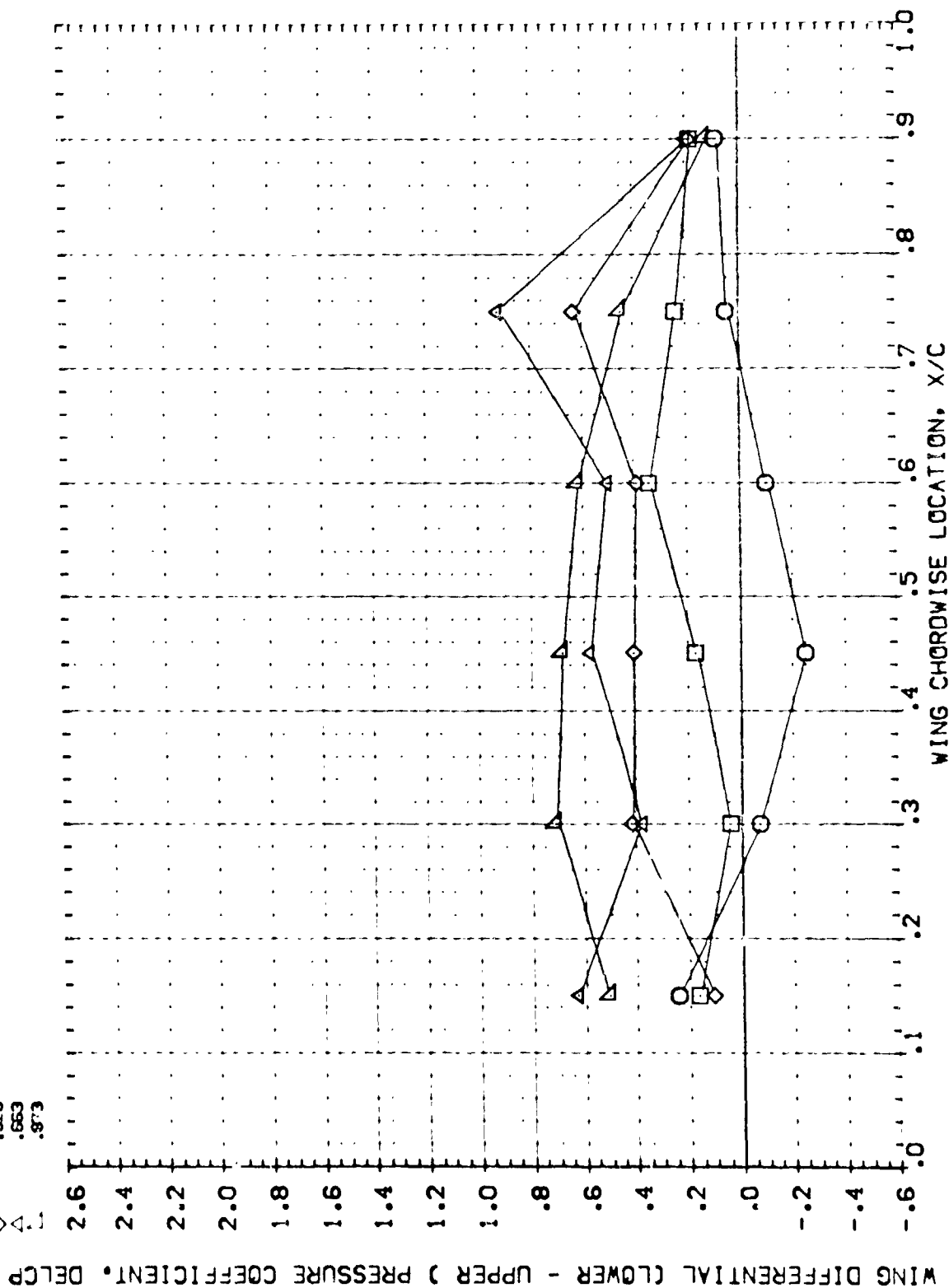


FIG 91 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, PTN/P=1.5, 15 ELEVON

0A57-B B16C5F1 J40 W87E18 WING TOTAL SURFACE(ADW34)

PARAMETRIC VALUES
 BETA .000 P_{TN}/P 1.500
 H/B .286 BD/FLAP -18.000
 ELEVON 15.000

SYMBOL Z_{T/B} ALPHA MACH
 ○ .000 9.995 .165
 △ .334
 ◇ .520
 □ .653
 ● .873

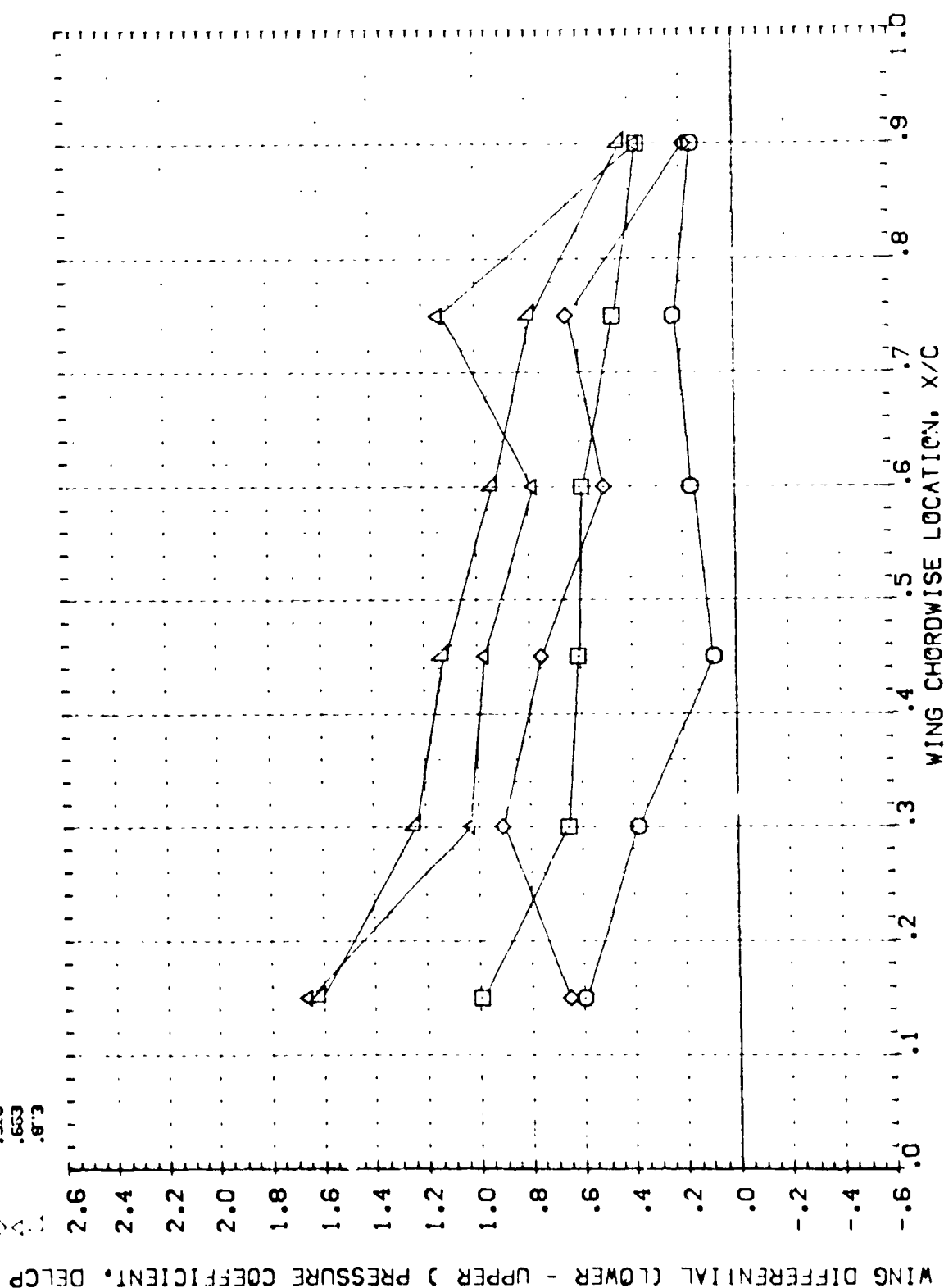


FIG 91 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J40, P_{TN}/P=1.5, 15 ELEVON

0A57-B B16C5F1 J41 W87E18 WING TOTAL SURFACE (ADVW56)

| | | | | | | |
|--------|------|--------|------|-------------------|--------|---------|
| SYMBOL | 21/B | ALPHA | MACH | PARAMETRIC VALUES | | |
| 1.0 | .000 | 10.005 | .165 | BETA | PTN/P | 1.000 |
| 2.0 | .304 | | | H/B | BU LAP | -18.000 |
| 3.0 | .520 | | | ELEVON | | |
| 4.0 | .663 | | | | | |
| 5.0 | .873 | | | | | |

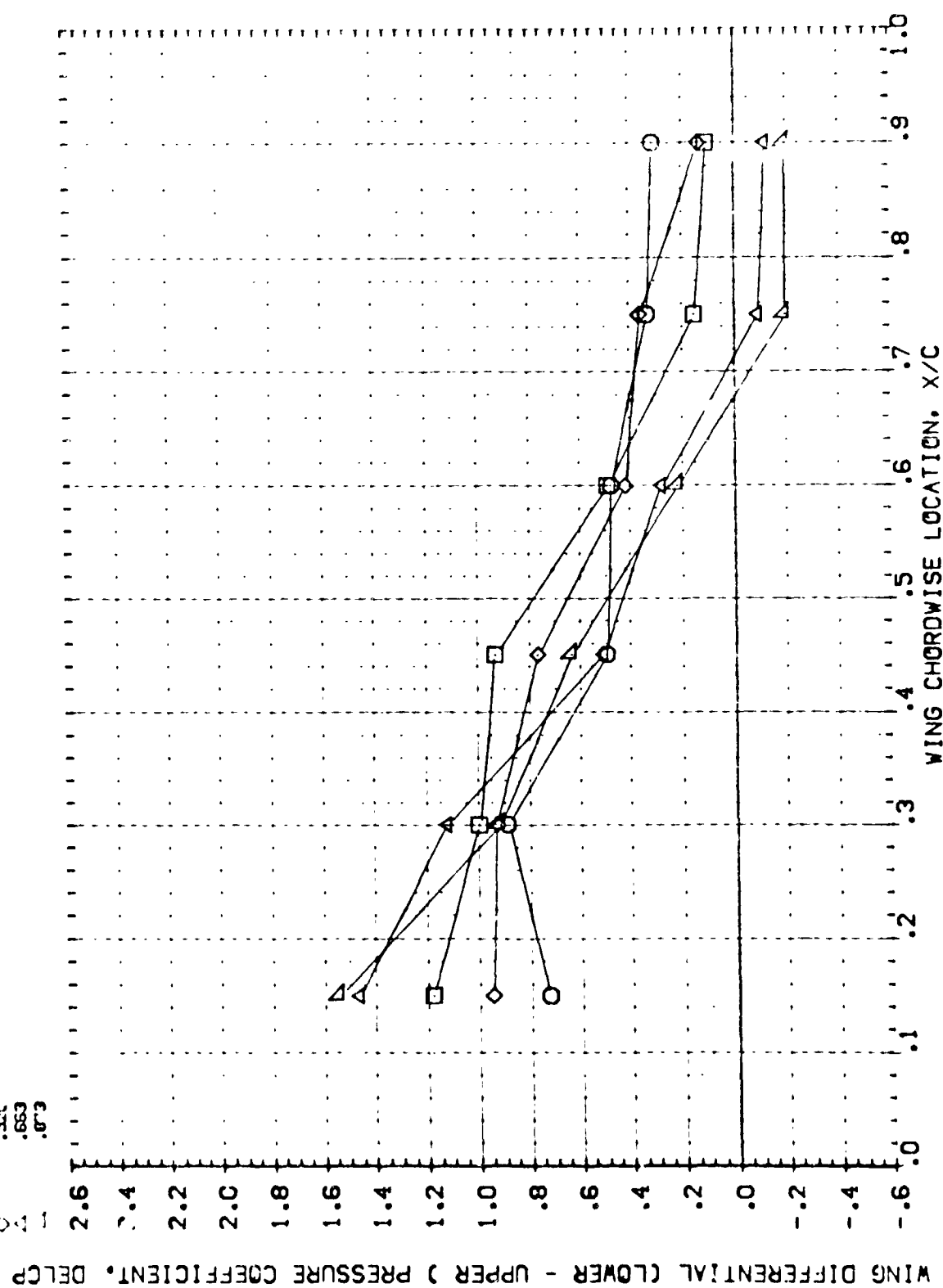


FIG 92 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING TOTAL SURFACE (ADVW58)

| | | | | | |
|--------|------|-------|------|--------|---------------------|
| SYMBOL | 21/8 | ALPHA | MACH | BETA | PARAMETRIC VALUES |
| 0 | .000 | -.005 | .165 | H/8 | .000 PTN/P 1.000 |
| 1 | .334 | | | ELEVON | .125 BOFLAP -18.000 |
| 2 | .500 | | | | .000 |
| 3 | .663 | | | | |
| 4 | .873 | | | | |

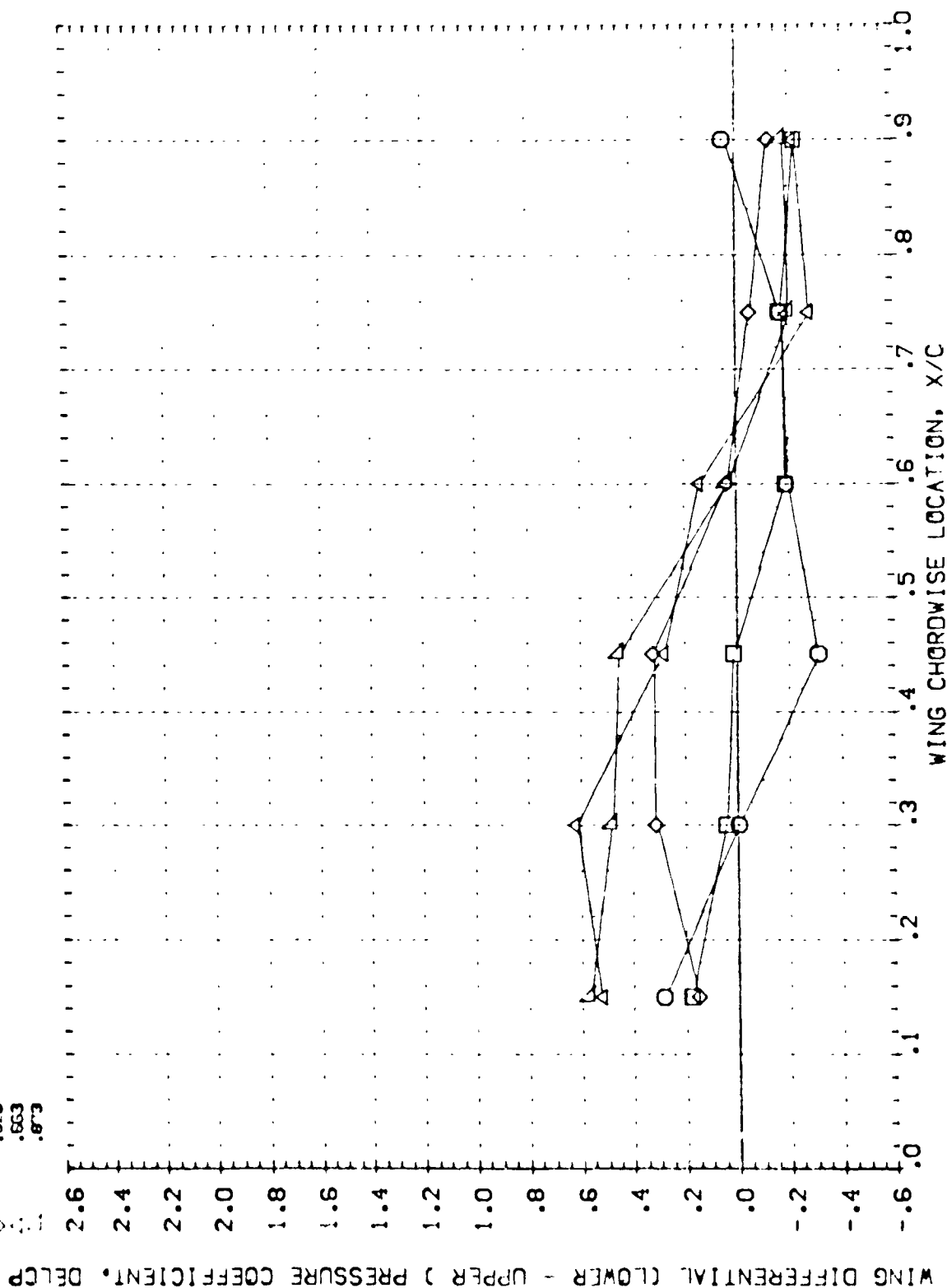


FIG 92 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING TOTAL SURFACE (ADVW53)

| | | | | | | | |
|--------|------|-------|------|------|-------|---------|---------|
| SYMBOL | 2V/B | ALPHA | MACH | BETA | PTN/P | BD/FLAP | ELEVON |
| 1.0 | .000 | -.003 | .185 | .000 | .000 | .000 | 1.000 |
| 2.0 | .304 | | | .206 | | | -18.000 |
| 3.0 | .520 | | | .300 | | | |
| 4.0 | .663 | | | | | | |
| 5.0 | .873 | | | | | | |

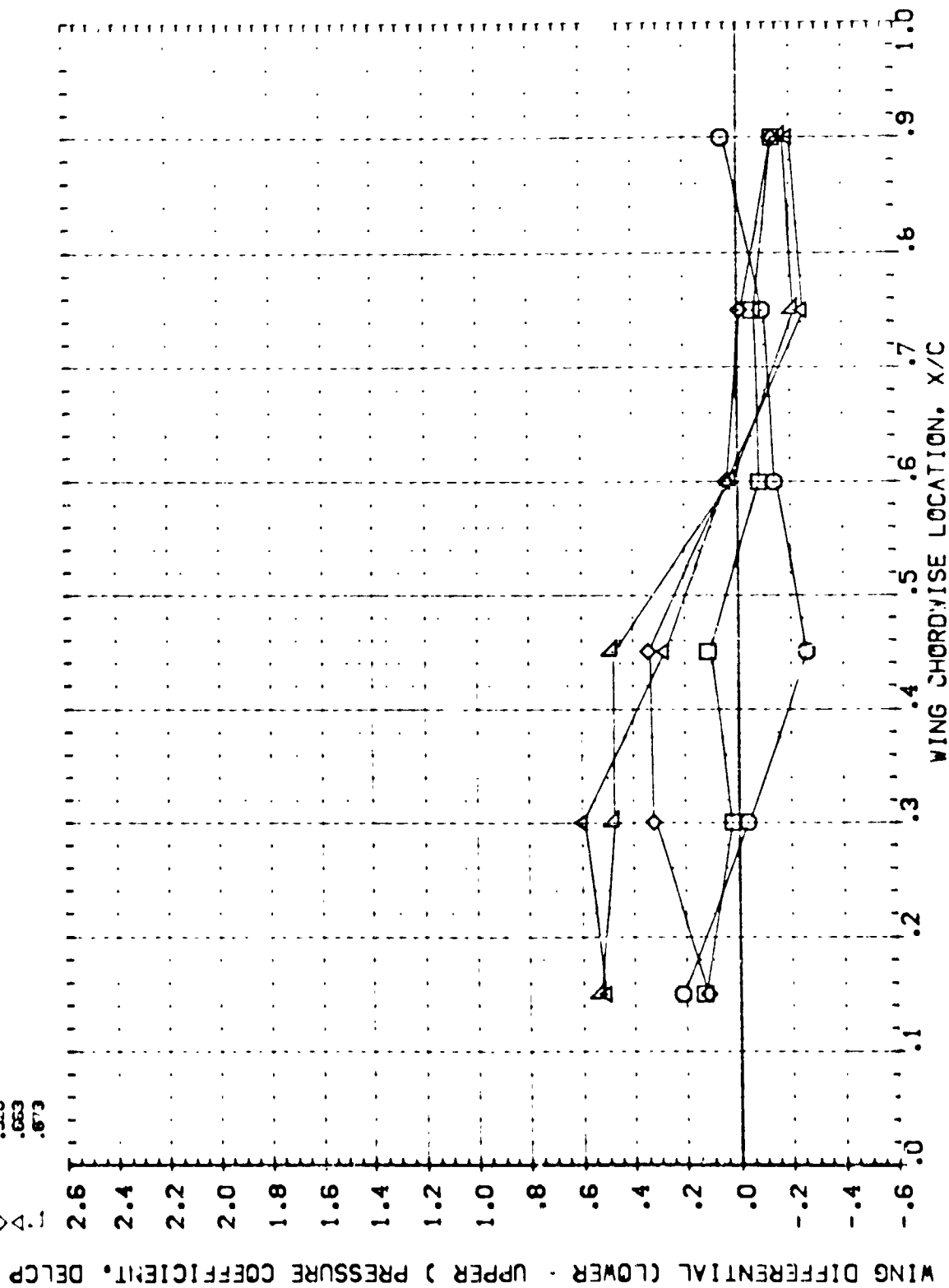


FIG 92 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.0, 0 ELEVON

0457-B 8:6C5F: J41 W87E18 WING TOTAL SURFACE (ADJW53)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .286 BOFLAP -18.000
 ELEVON .000

SYMBOL ZY B ALPHA MACH
 O .000 9.980 .165
 Δ .334
 □ .550
 ◇ .663
 △ .873

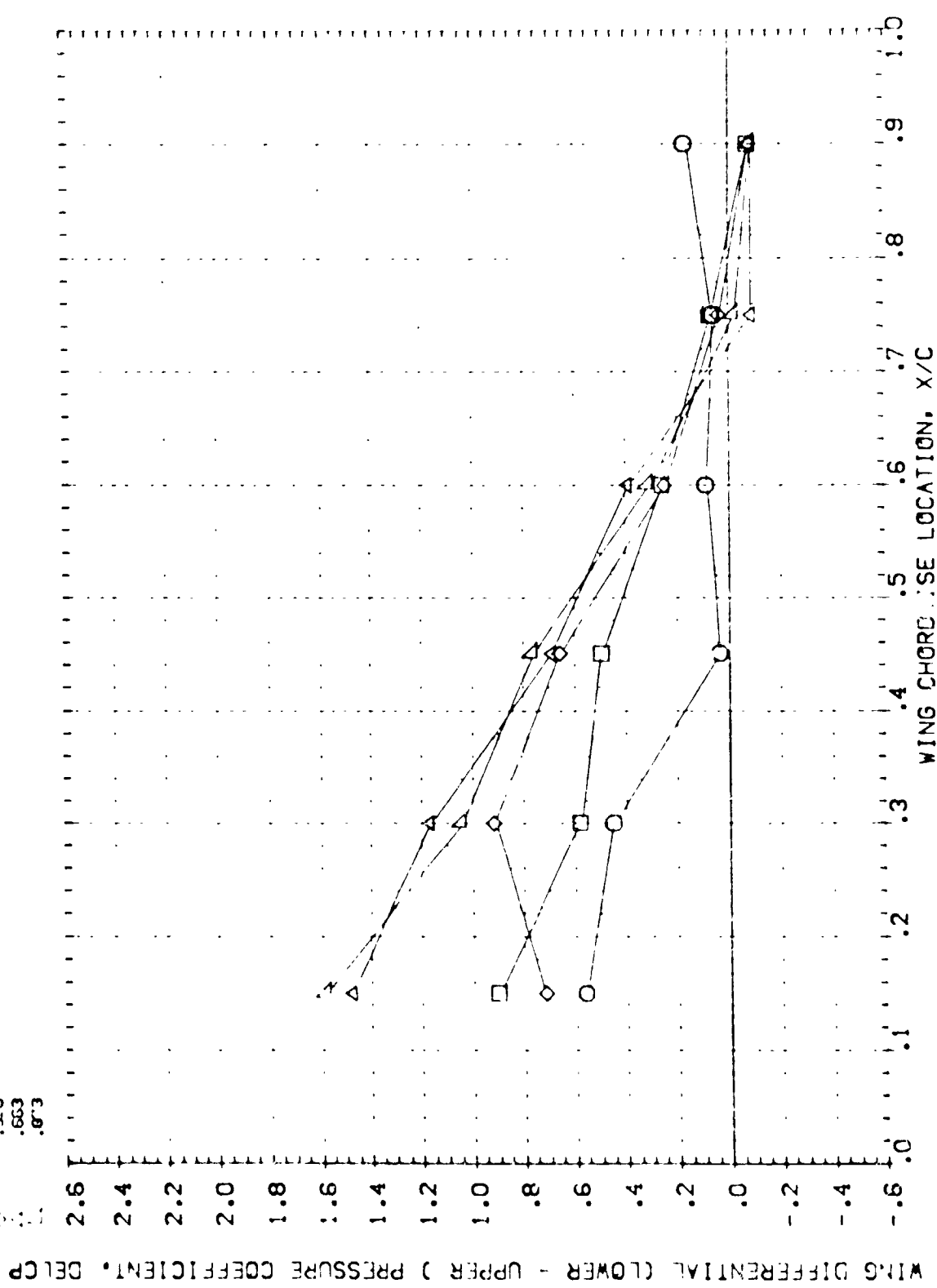


FIG 92 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING TOTAL SURFACE(ADW55)

PARAMETRIC VALUES
 BETA PTN/P 1.300
 M/B BOFLAP -18.000
 ELEVON .000

SYMBOL 2V/B ALPHA MACH
 .000 9.990 .165
 .304
 .520
 .653
 .873

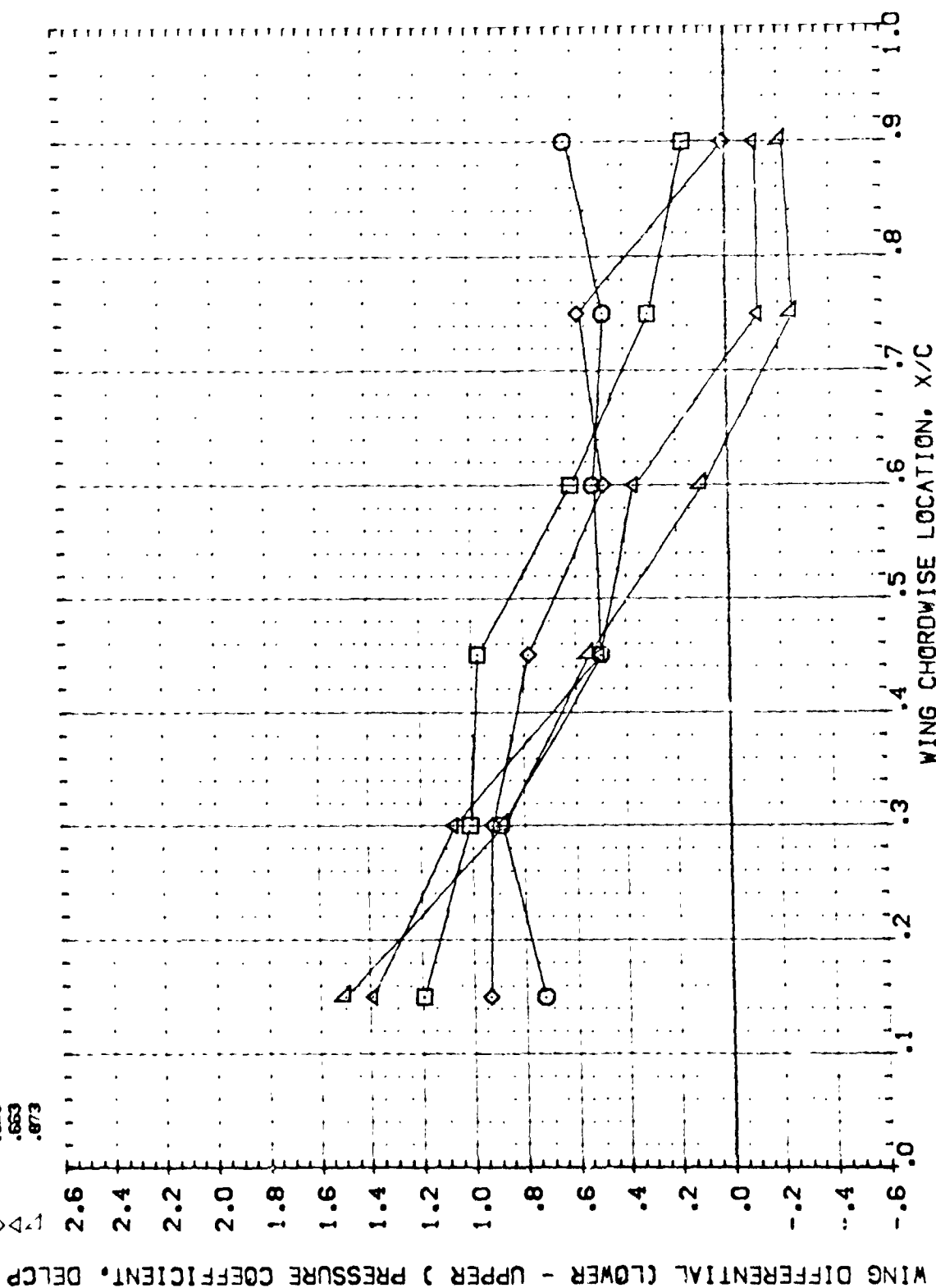


FIG 93 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J41 W87E18 WING TOTAL SURFACE (ADVW57)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BOFLAP -18.000
 ELEVON .000

ALPHA -.005 MACH .165

SYMBOL
 21/8 .000
 .334
 .520
 .663
 .873

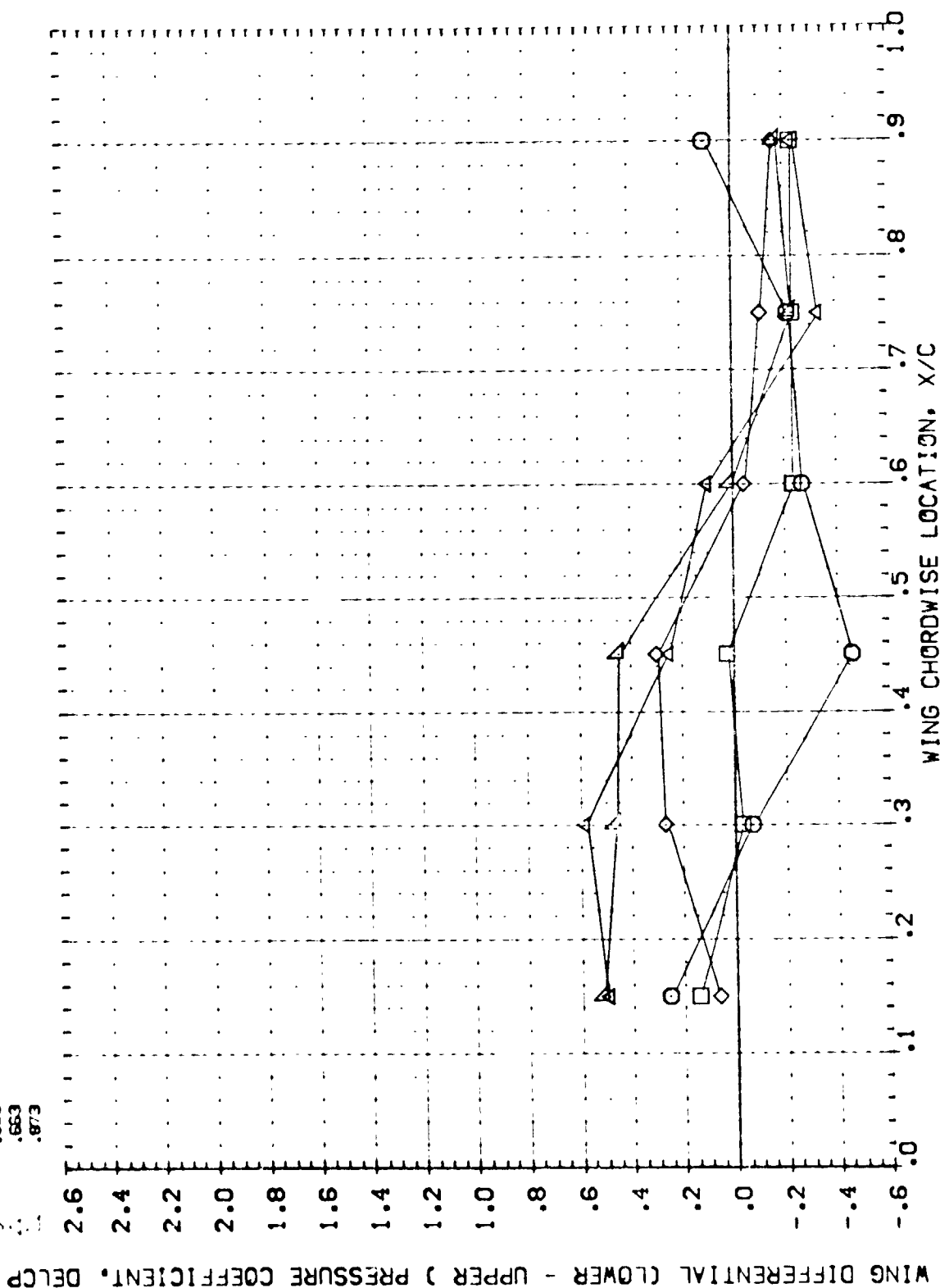


FIG 93 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON
 PAGE 433

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .125 BOFLAP -18.000
 ELEVON .000

SYMBOL 21/B ALPHA MACH
 .000 9.995 .165
 .304
 .520
 .653
 .873

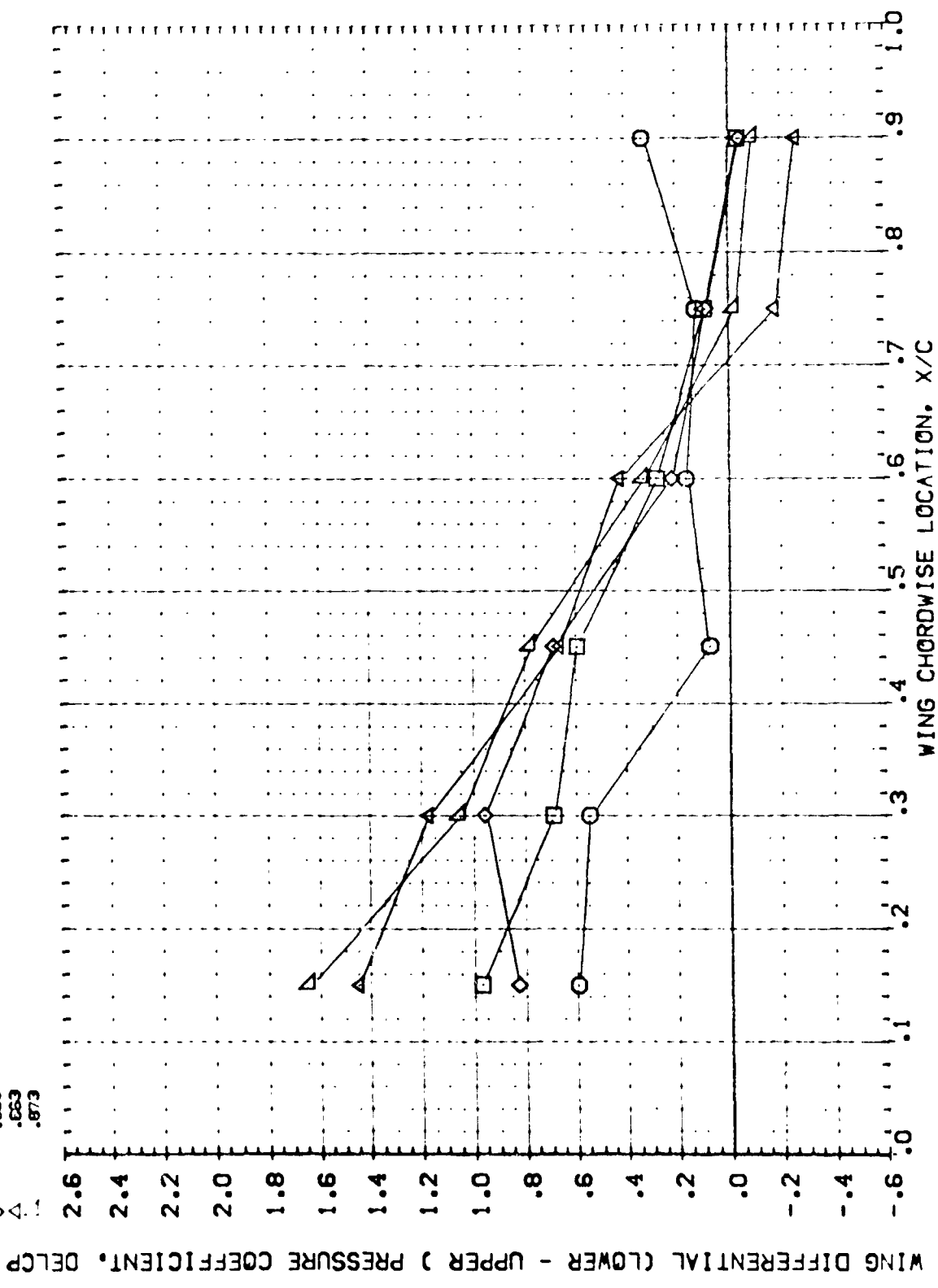


FIG 93 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J41 W87E18 WING TOTAL SURFACE (ADVW52)

PARAMETRIC VALUES
 BETA PTN/P 1.300
 H/B BOFLAP -18.000
 ELEVON .000

SYMBOL 2N/B ALPHA MACH
 0 .000
 1 .304
 2 .500
 3 .663
 4 .873

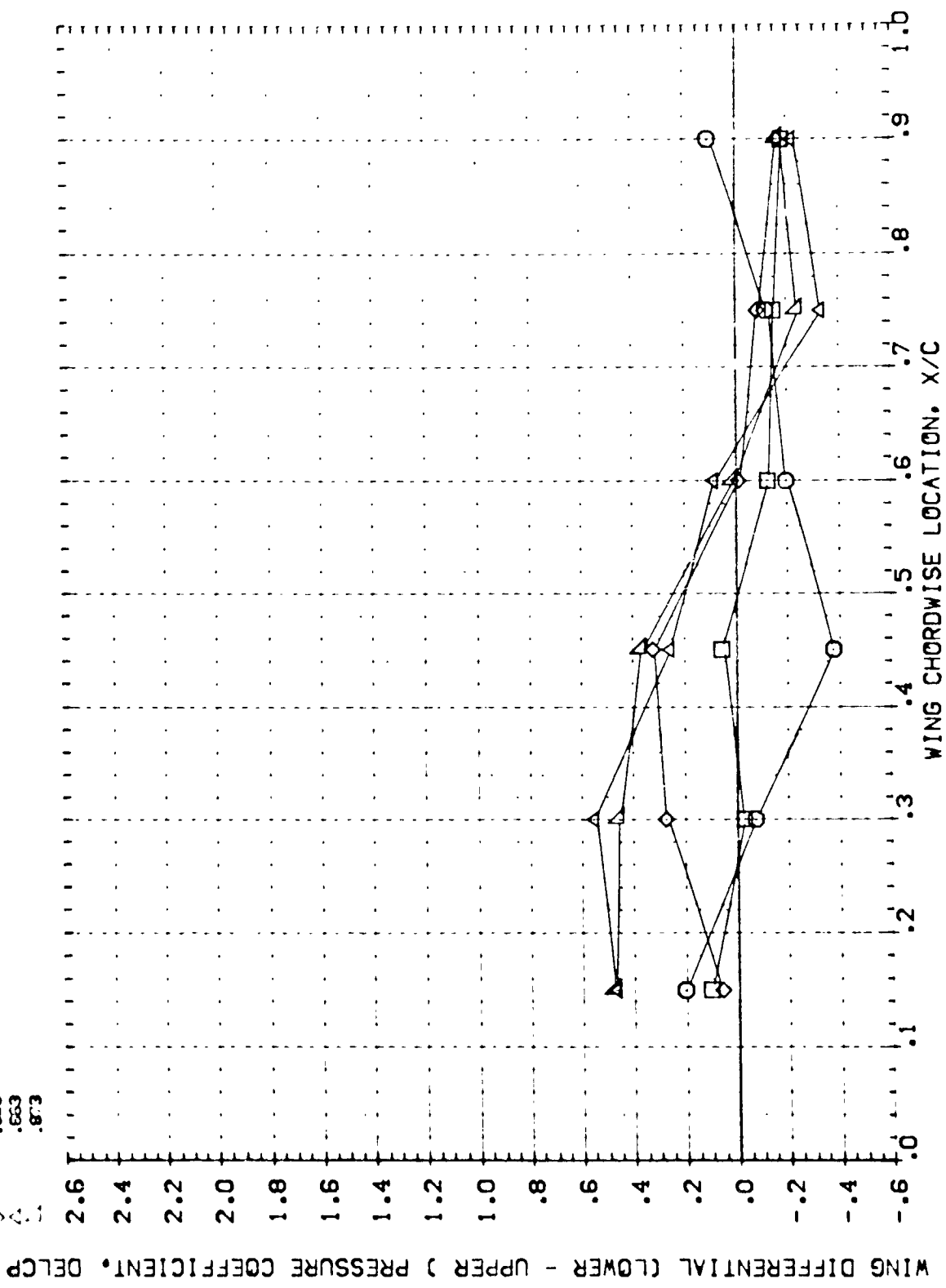


FIG 93 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

| | | | | | | | |
|--------|---------------|-------|------|--------|-------|----------|---------|
| SYMBOL | 2 γ /8 | ALPHA | MACH | BETA | PTN/P | 30° FLAP | PTN/P |
| ○ | .000 | 9.990 | .165 | H/8 | .000 | .000 | 1.300 |
| □ | .334 | | | ELEVON | .286 | .000 | -10.000 |
| ◇ | .520 | | | | | | |
| △ | .663 | | | | | | |
| ▽ | .873 | | | | | | |

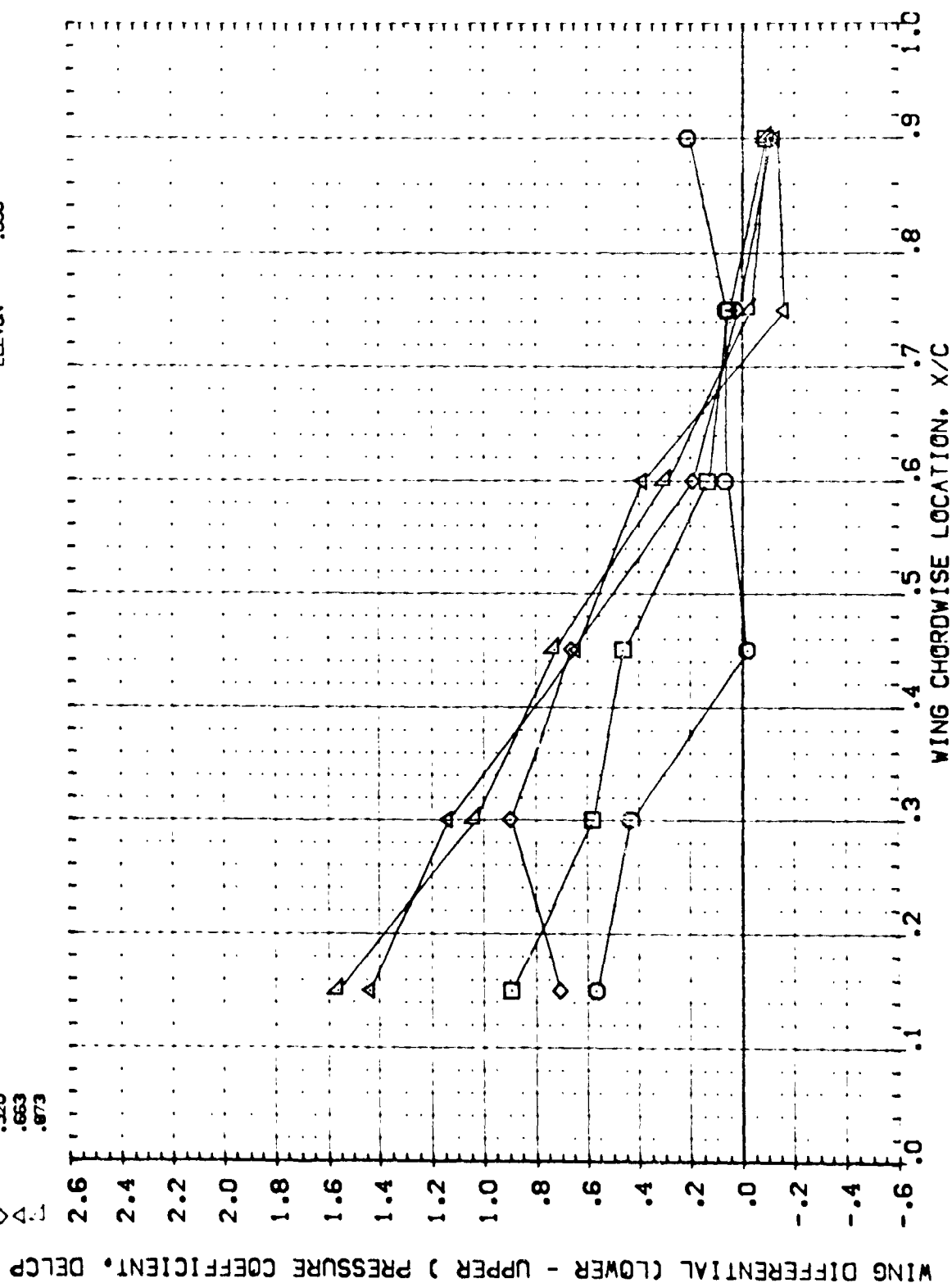


FIG 93 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J41, PTN/P=1.3, 0 ELEVON

0A57-B B16CSF1 J42 W87E18 WING TOTAL SURFACE (ADVW64)

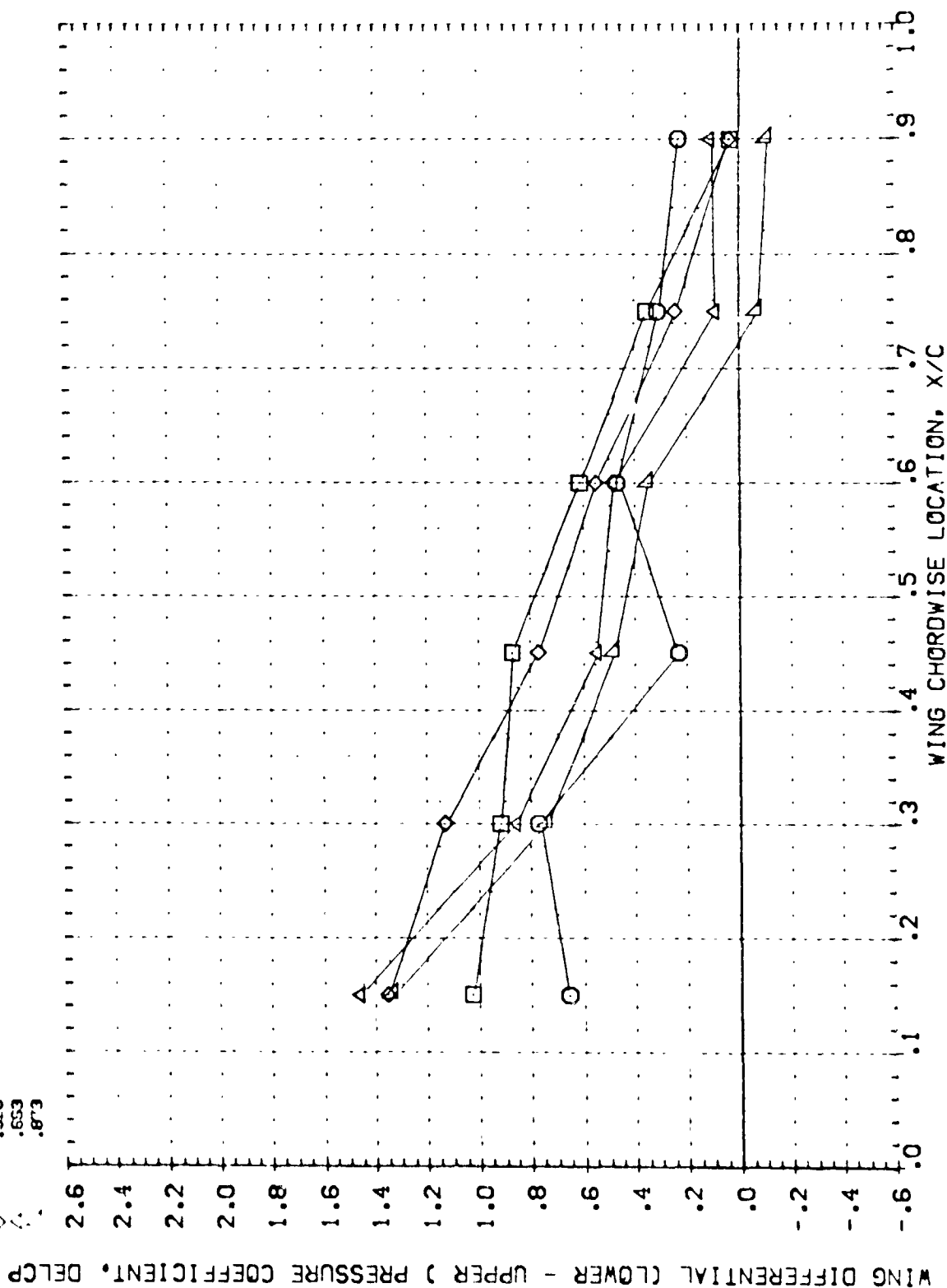


FIG 94 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW61)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 H/B .125 BOFLAP -18.000
 ELEVON .000

2V/B ALPHA MACH
 .000 -.025 .165
 .304
 .520
 .663
 .873

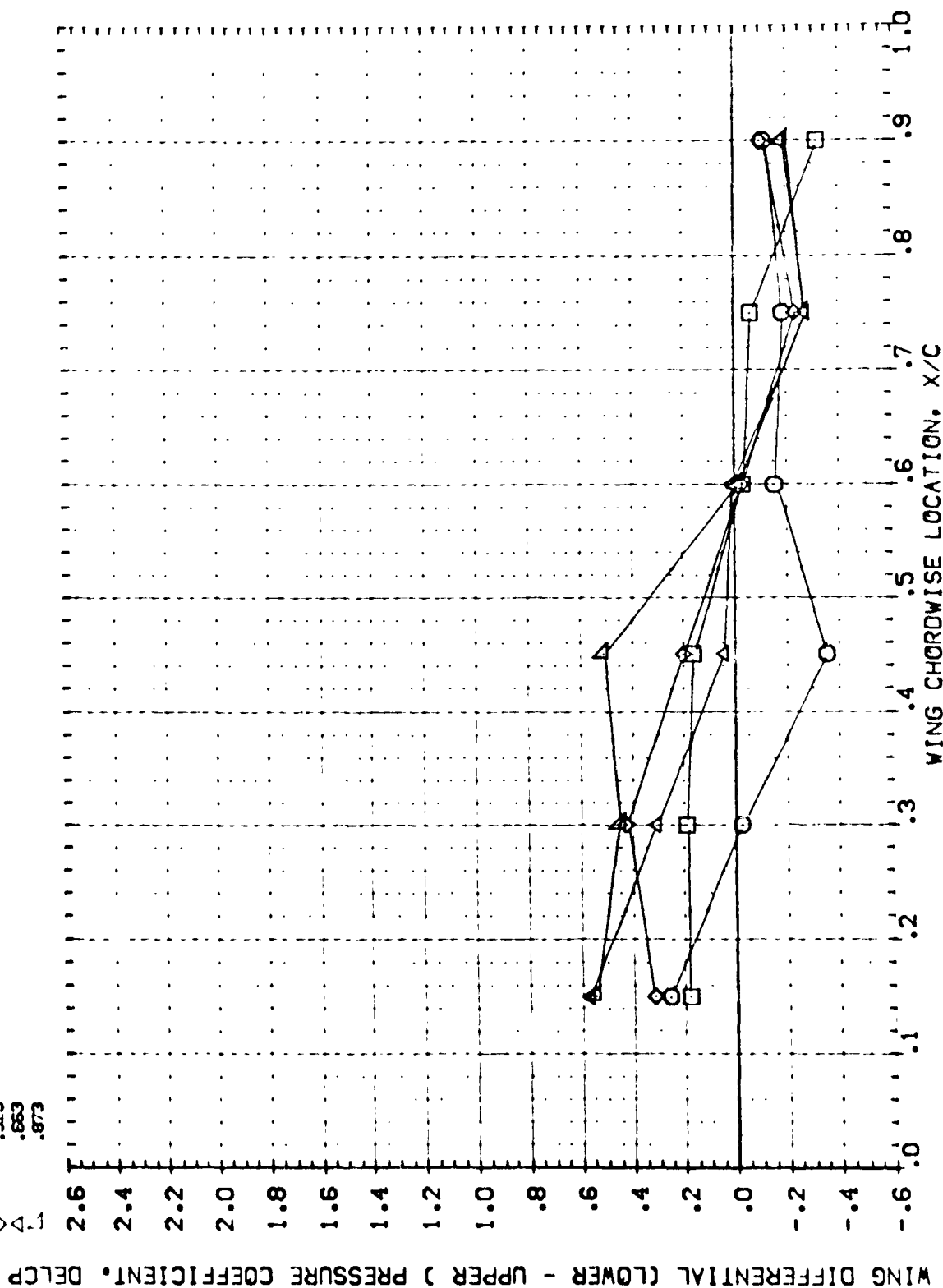


FIG 94 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B B16CSF1 J42 W87E18 WING TOTAL SURFACE(ADW61)

| SYMBOL | 2N/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-----------------|------------------|--------|
| | | | | BETA H/B | PTN/P 80FLAP | 1.000 -18.000 | ELEVON |
| ○ | .000 | 9.965 | .165 | .000 | .000 | | |
| ◇ | .334 | | | .125 | | | |
| △ | .520 | | | .000 | | | |
| □ | .663 | | | | | | |
| ○ | .873 | | | | | | |

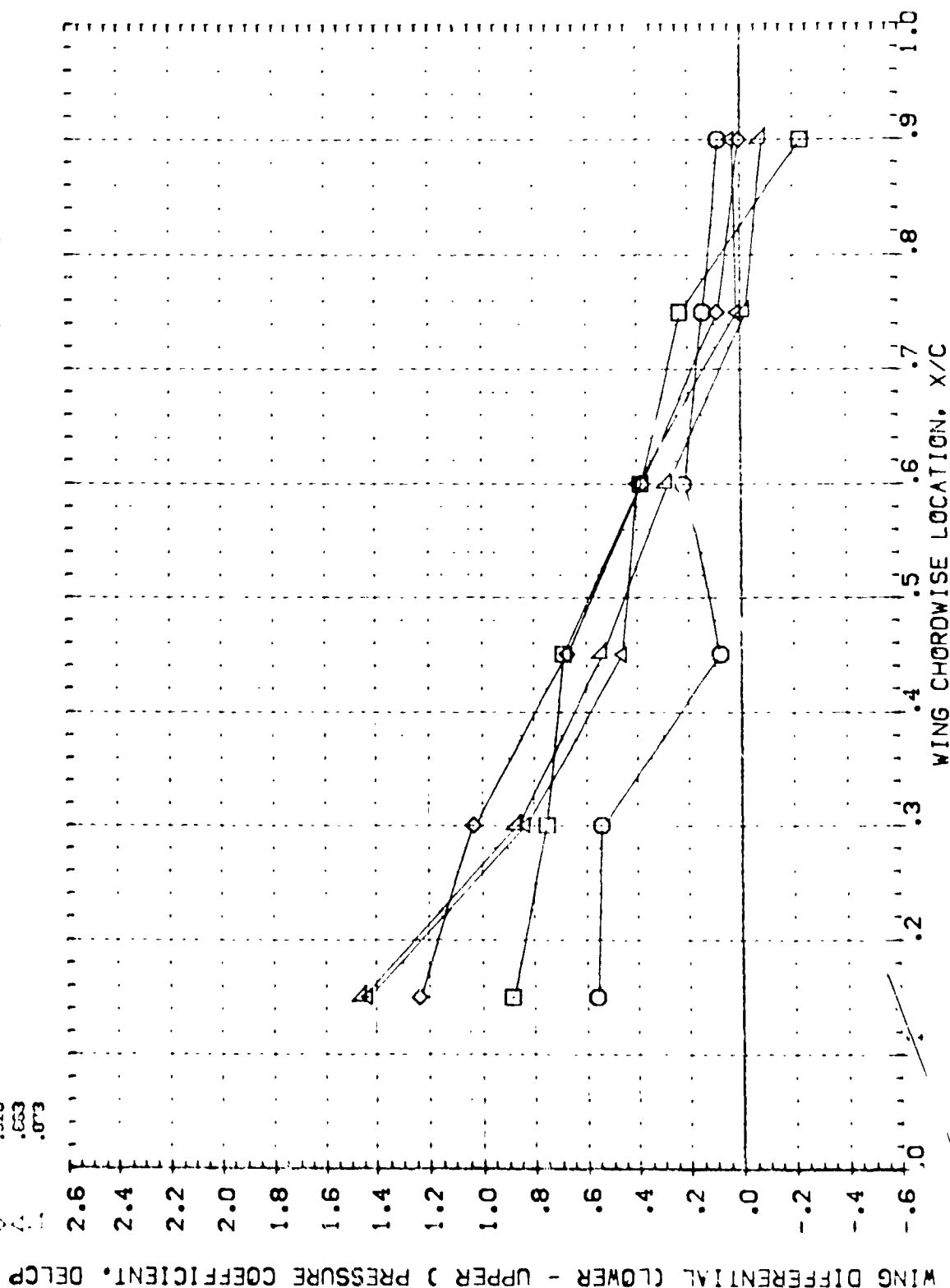


FIG 94 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.0, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW70)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.000
 M/S .285 BOFLAP -18.000
 ELEVON .000

SYMBOL 2V/B ALPHA MACH
 O .000 -.010 .185
 □ .304
 △ .320
 ◇ .653
 △ .873

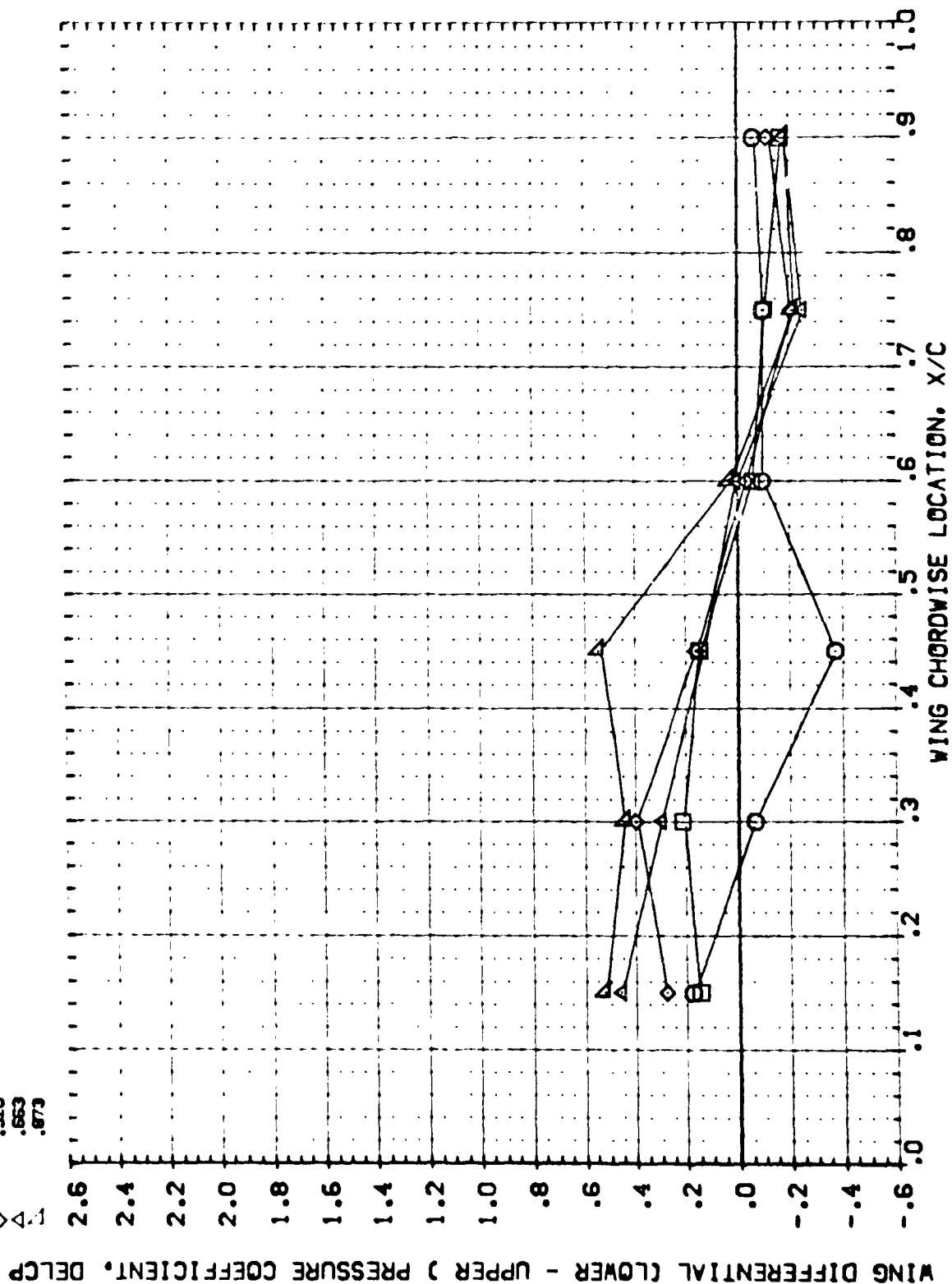


FIG 94 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42. PTN/P=1.0. 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW70)

| SYMBOL | 2V/B | ALPHA | MACH | PARAMETRIC VALUES | | | |
|--------|------|-------|------|-------------------|-------|--------|------------------|
| | | | | BETA H/B | PTN/P | BOFLAP | 1,000 -10,000 |
| ○ | .000 | 9.550 | .165 | .000 | .000 | .000 | 1,000 |
| □ | .334 | | | .286 | | | -10,000 |
| △ | .570 | | | | | | |
| ◇ | .653 | | | | | | |
| ▽ | .873 | | | | | | |

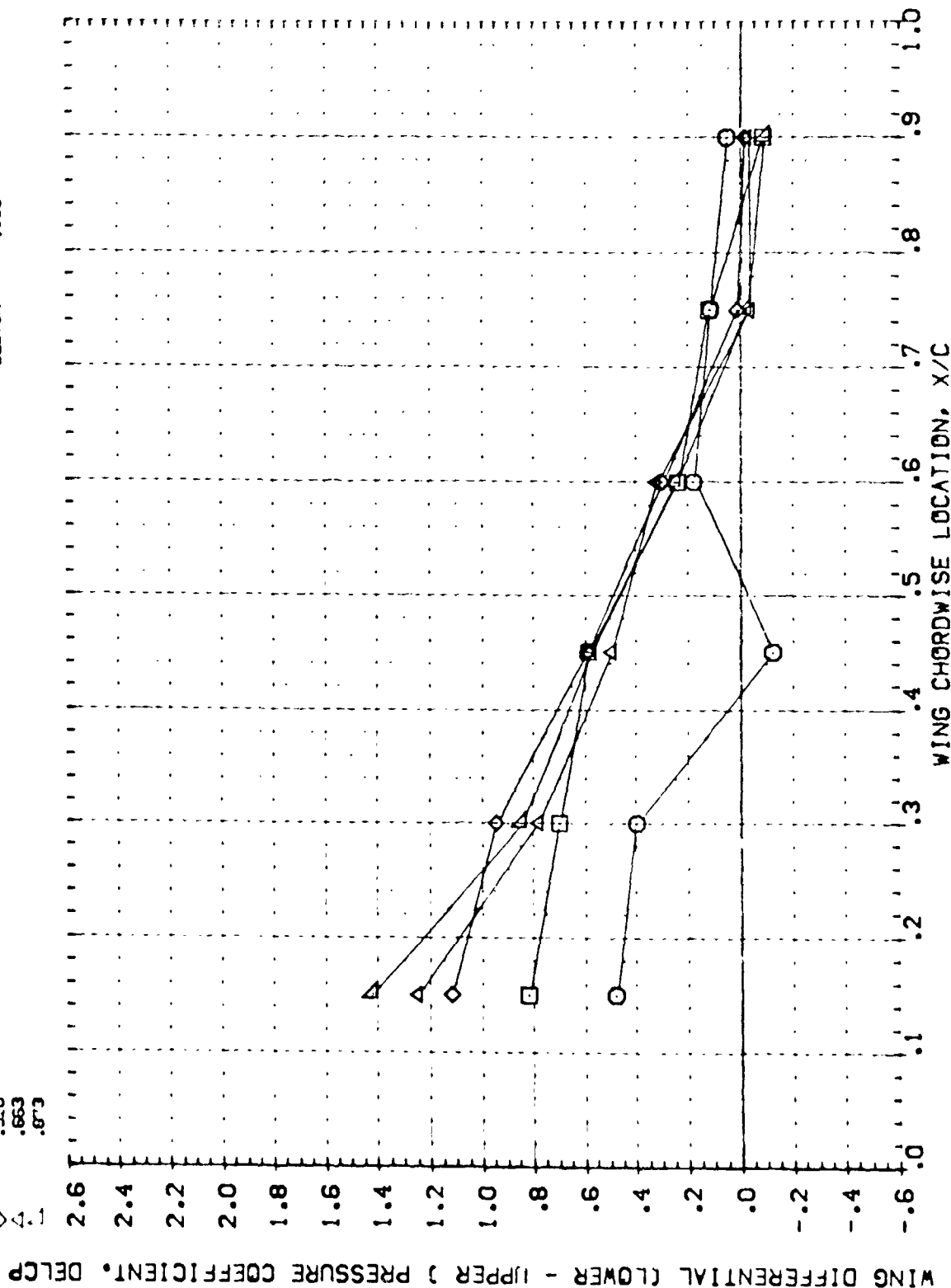


FIG 94 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.0, 0 ELEVON

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .005 BOFLAP -10.000
 ELEVON .000

SYMBOL 27/8 ALPHA MACH
 .000 9.995 .165
 .304
 .520
 .663
 .873

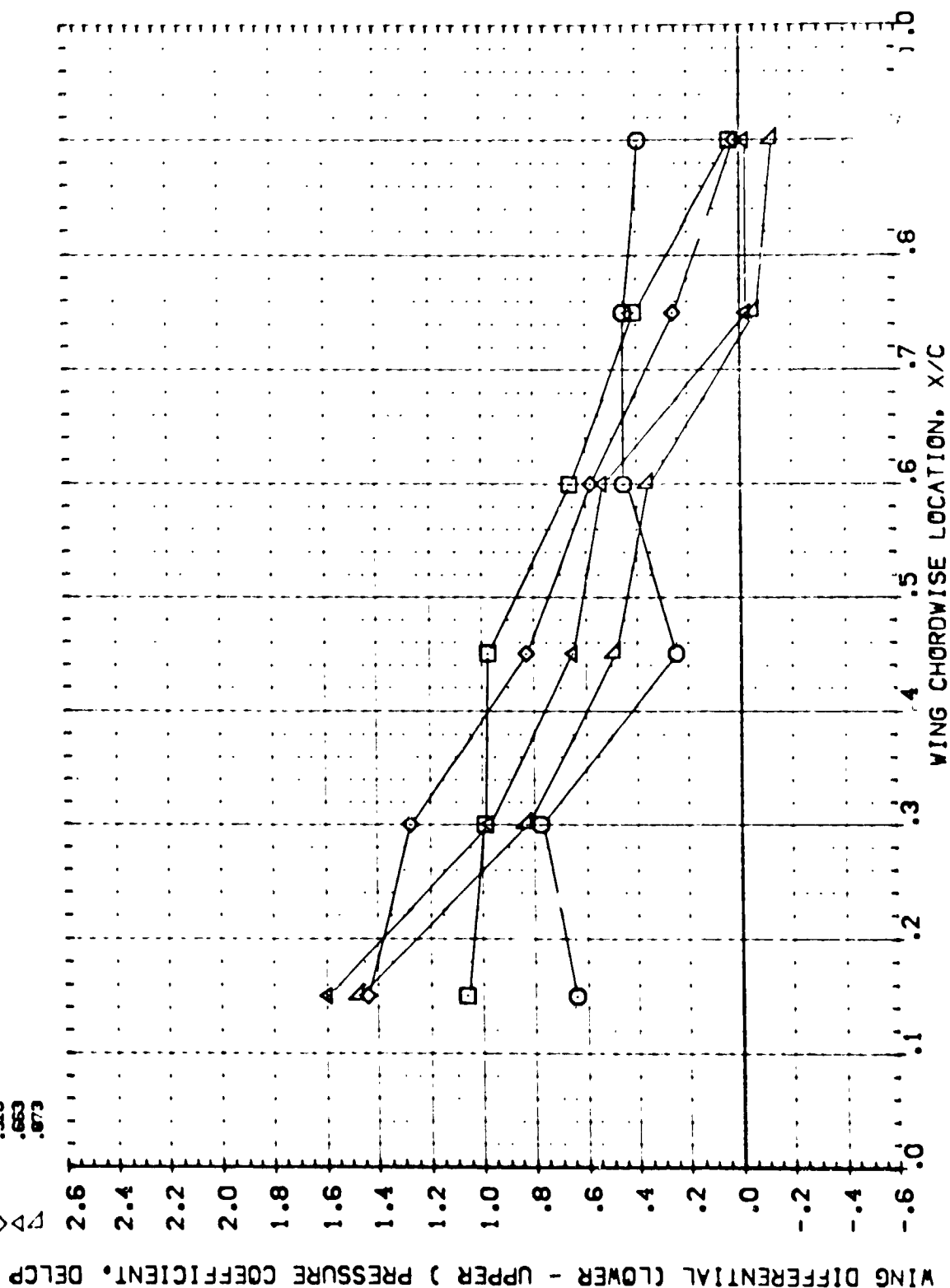


FIG 95 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/ 1.300 ELEVON

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW60)

| SYMBOL | Z/H | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|-----------------------------|
| | | | | BETA H/B | PTN/P | 1.300 BOT LAP -18.000 |
| 1.0 | .000 | -.010 | .165 | .000 | .125 | .000 |
| 1.1 | .304 | | | | | |
| 1.2 | .500 | | | | | |
| 1.3 | .653 | | | | | |
| 1.4 | .873 | | | | | |

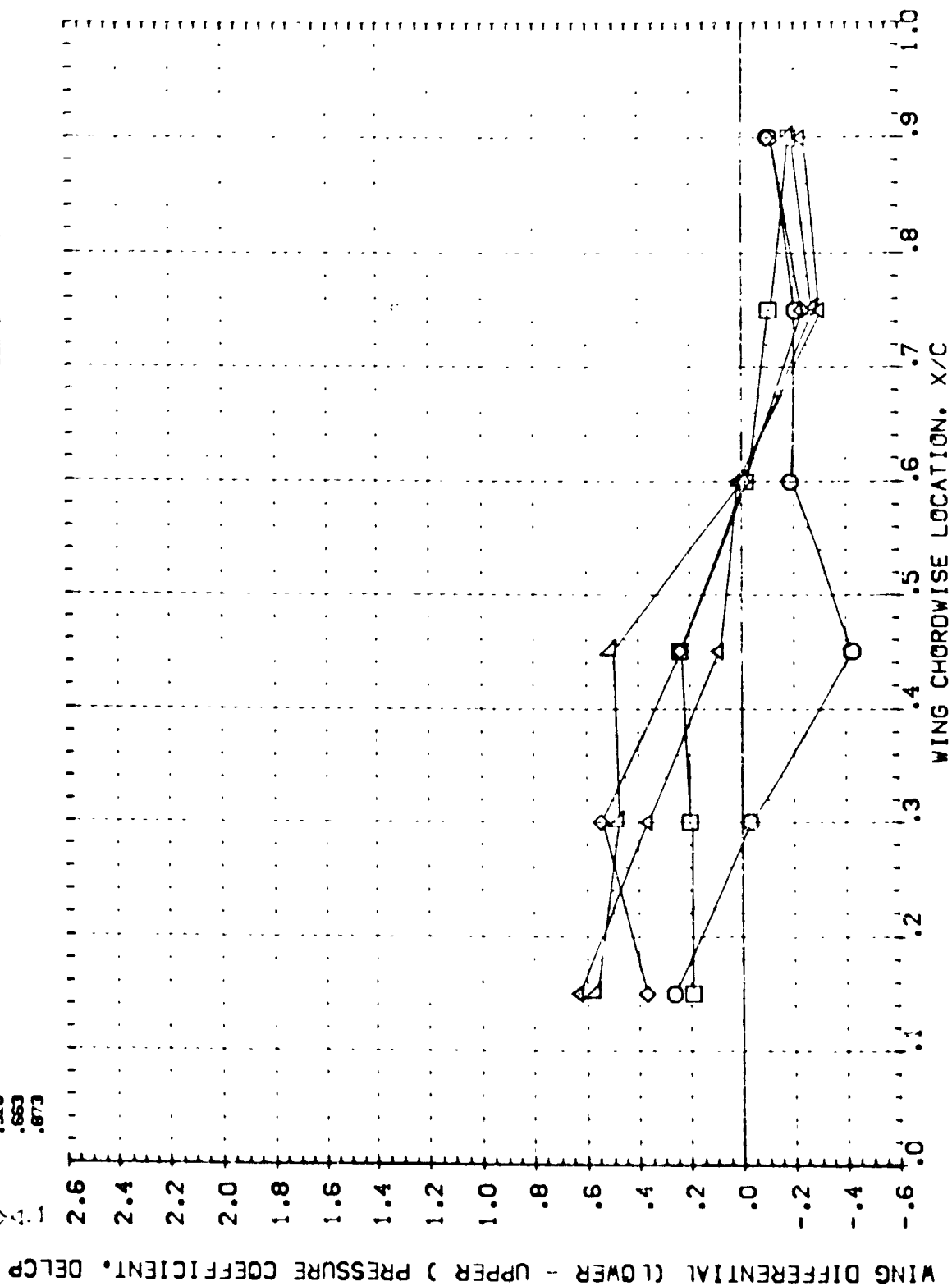


FIG 95 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

GA57-B 816C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW60)

| | | | | | | |
|--------|------|-------|------|-------------------|--------|--------|
| SYMBOL | 2N/B | ALPHA | MAOH | PARAMETRIC VALUES | | |
| 0 | .000 | 9.960 | .165 | BETA | PTN/P | 1.00 |
| 1 | .304 | | | H/B | BOFLAP | -18.00 |
| 2 | .320 | | | ELEVON | | .000 |
| 3 | .663 | | | | | |
| 4 | .873 | | | | | |

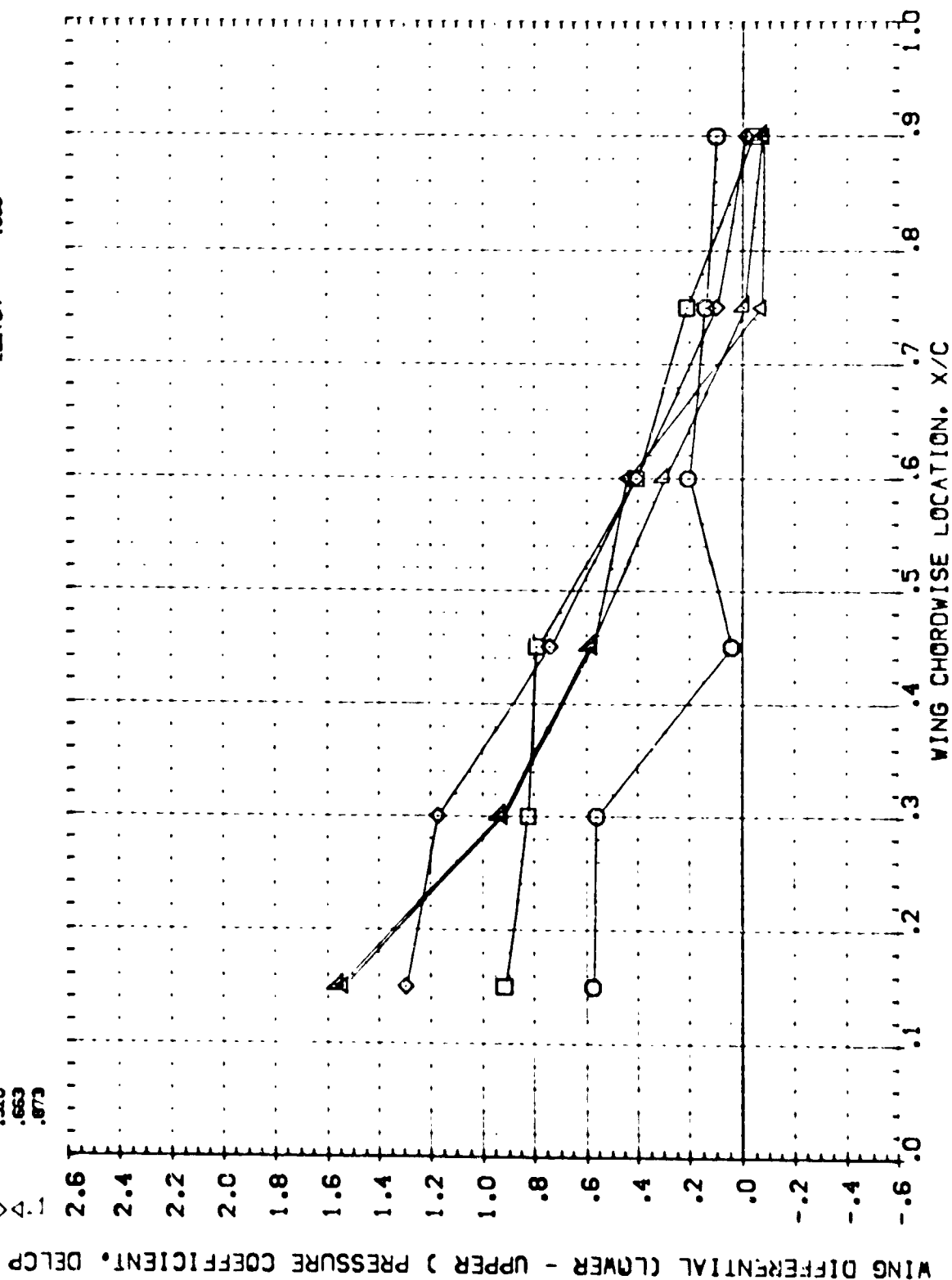


FIG 95 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-S B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW69)

| | | | | | | | |
|--------|------|-------|------|------|-------|--------|--------|
| SYMBOL | 2Y/B | ALPHA | MACH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | .005 | .165 | .000 | .000 | .000 | .000 |
| ◇ | .394 | | | .000 | .266 | | .000 |
| △ | .520 | | | | | | |
| □ | .653 | | | | | | |
| ▽ | .873 | | | | | | |

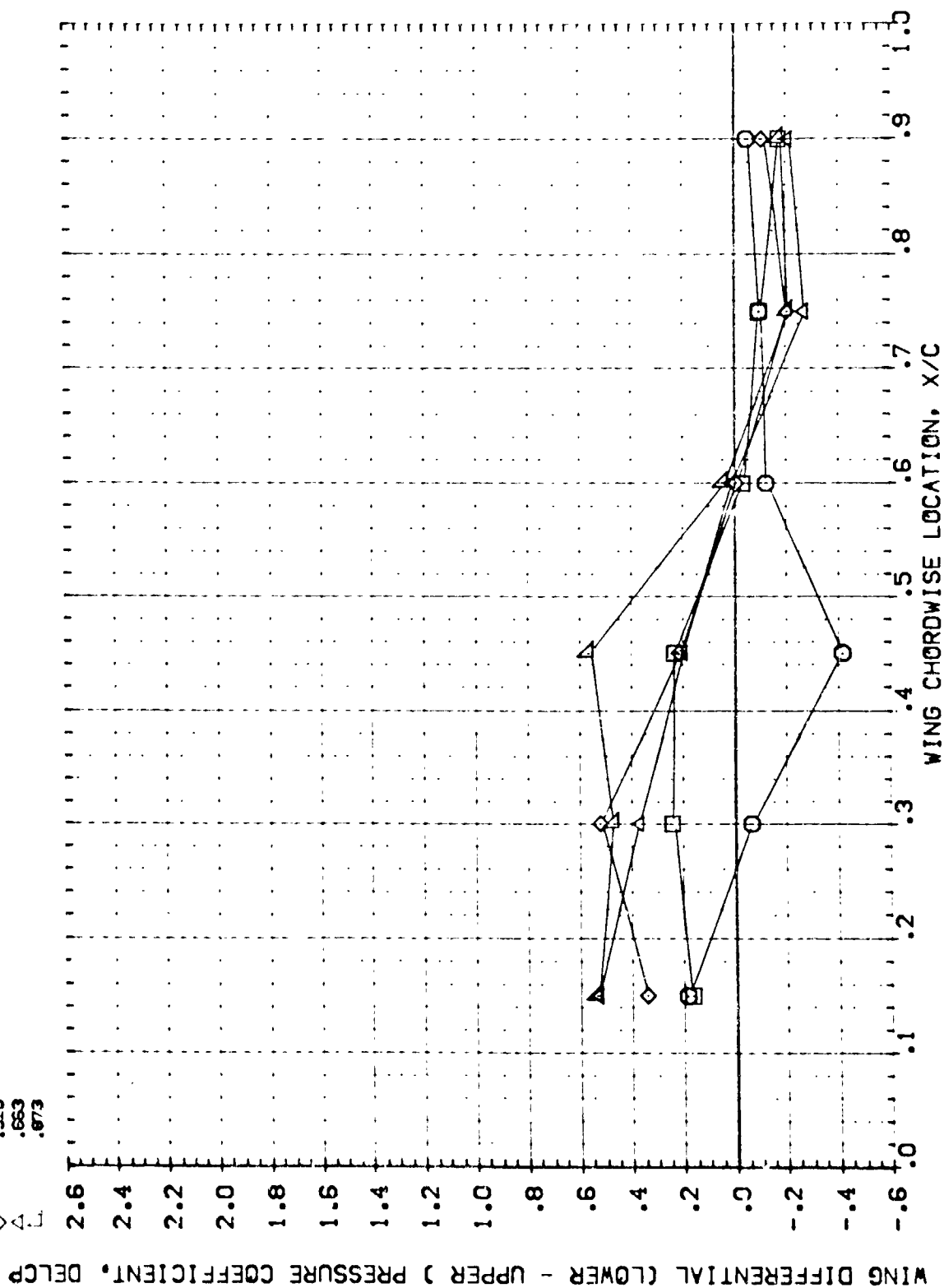


FIG 95 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B 816C5F1 J42 W87E18 WING TOTAL SURFACE(ADVM69)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.300
 H/B .285 BOFLAP -18.000
 ELEVON .000

SYMBOL 21/8 ALPHA MACH
 ○ .000 10.010 .165
 □ .304
 ◇ .520
 △ .663
 ▽ .873

WING DIFFERENTIAL (LOWER - UPPER) PRESSURE COEFFICIENT, DELCP

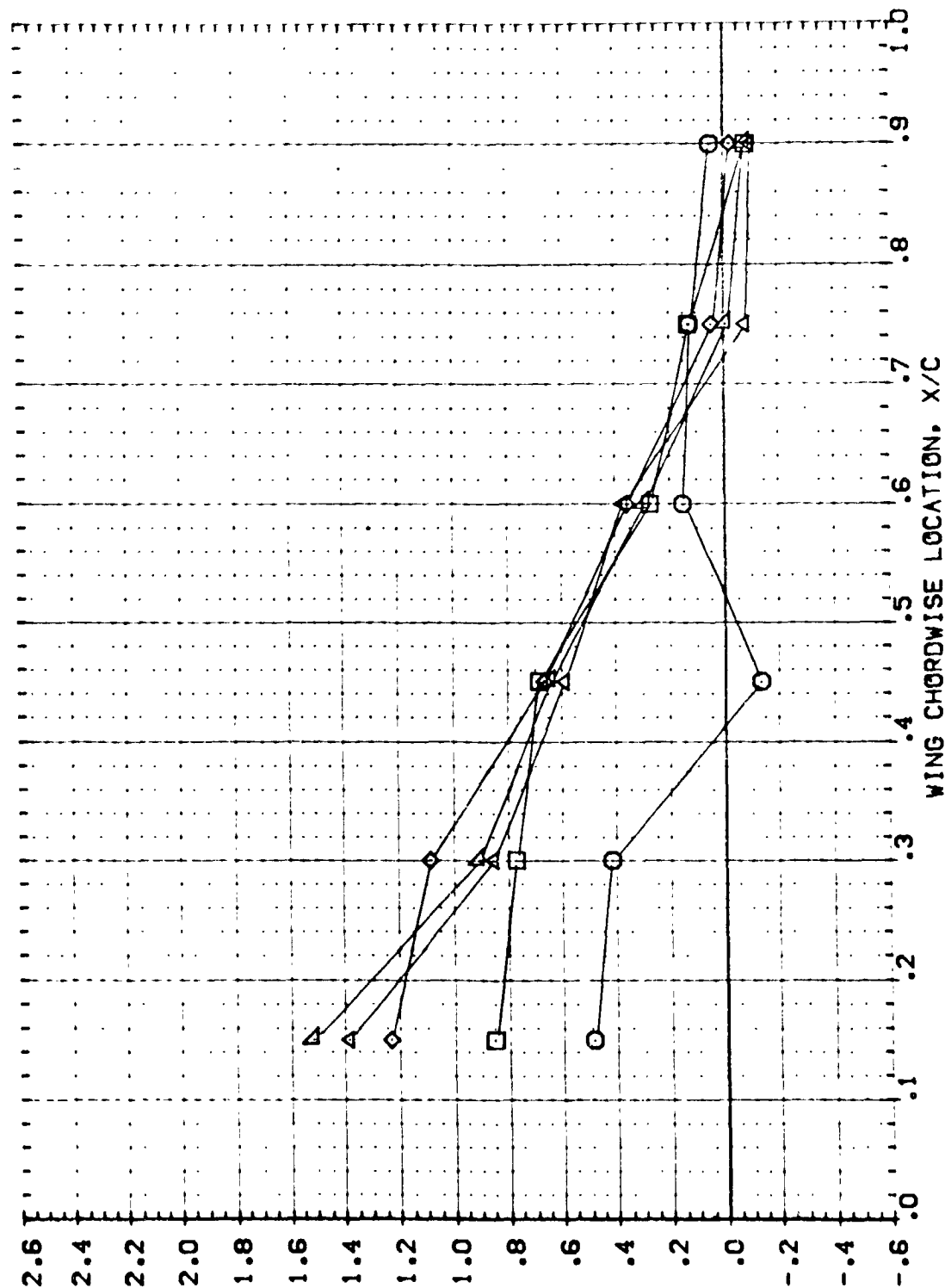


FIG 95 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.3, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADW62)
 SY-BOL Z1/B ALPHA MACH BETA PTN/P 1.500
 .000 10.000 .165 H/B BOFLAP -18.000
 .334 ELEVON .000
 .570
 .653
 .873

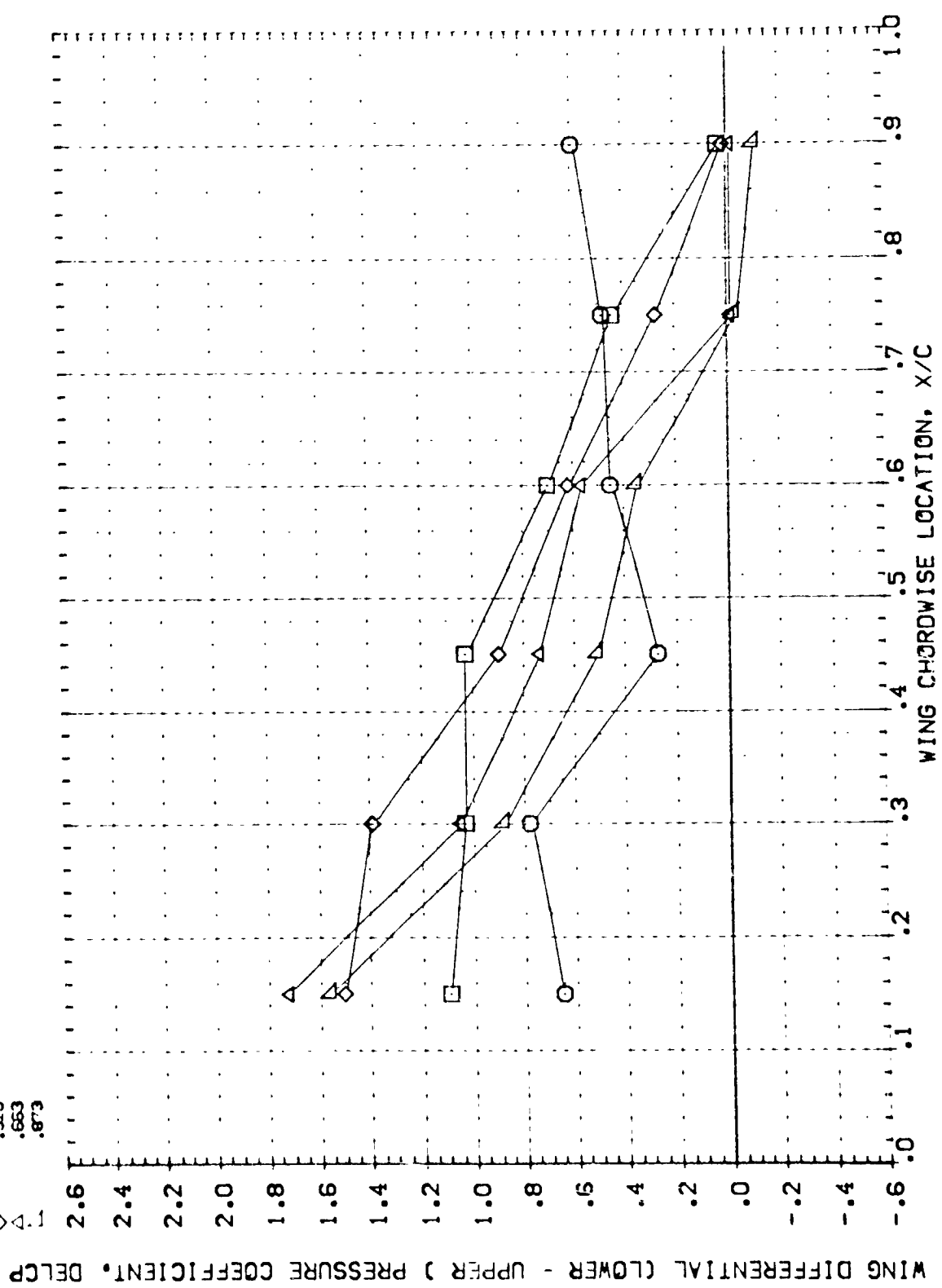


FIG 96 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON
 PAGE 447

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW59)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .125 BOFLAP -18.000
 ELEVON .000

SYMBOL 2X/B ALPHA MACH
 □ .000 -.010 .125
 ○ .334
 ◇ .520
 △ .663
 ▲ .873

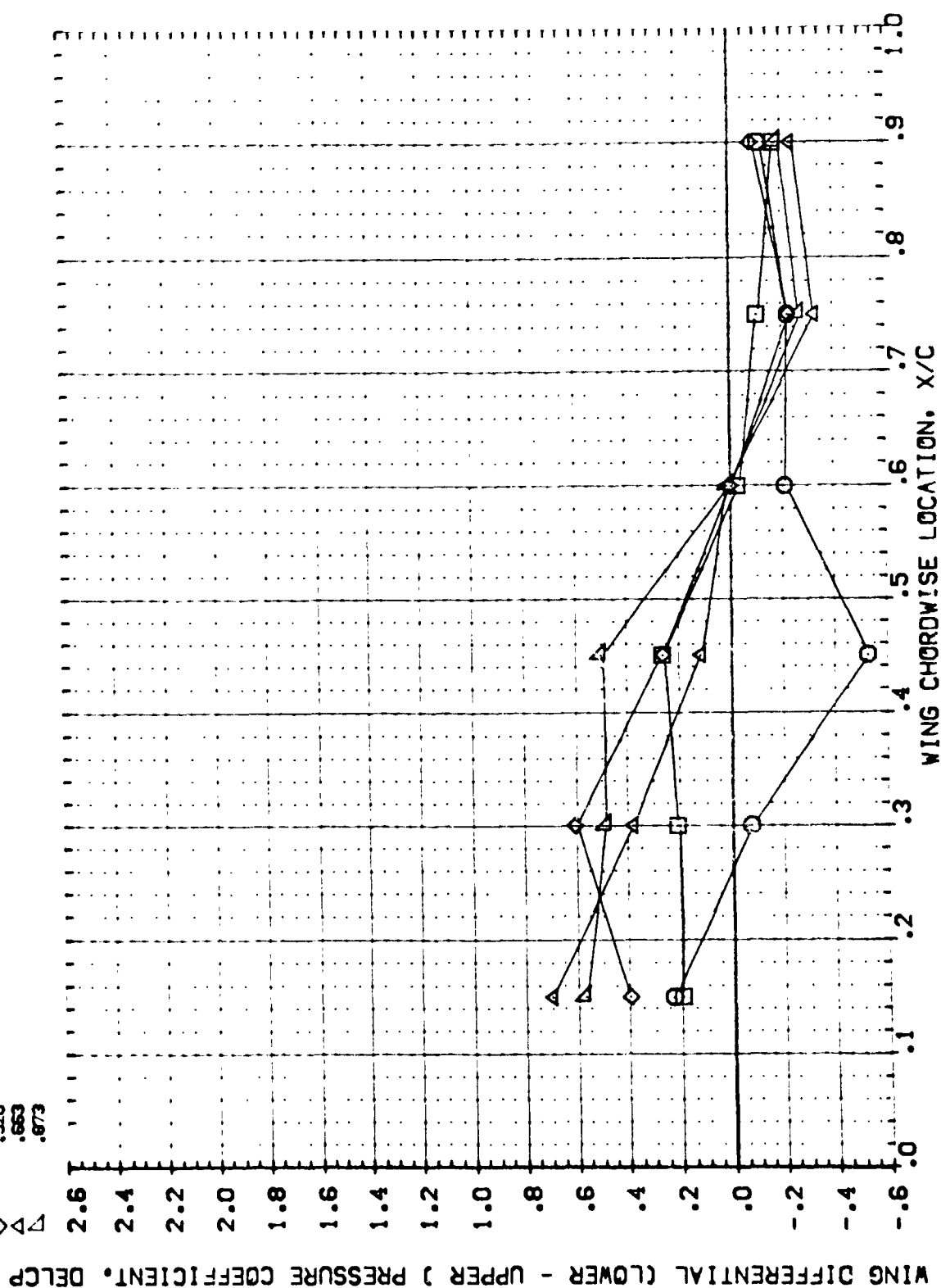


FIG 96 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW59)

| SYMBOL | 2Y/B | ALPHA | MACH | PARAMETRIC VALUES | | |
|--------|------|-------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | ELEVON |
| | .000 | 9.955 | .165 | H/B | .000 | 1.500 |
| | .334 | | | | .125 | -18.000 |
| | .520 | | | | | |
| | .653 | | | | | |
| | .873 | | | | | |

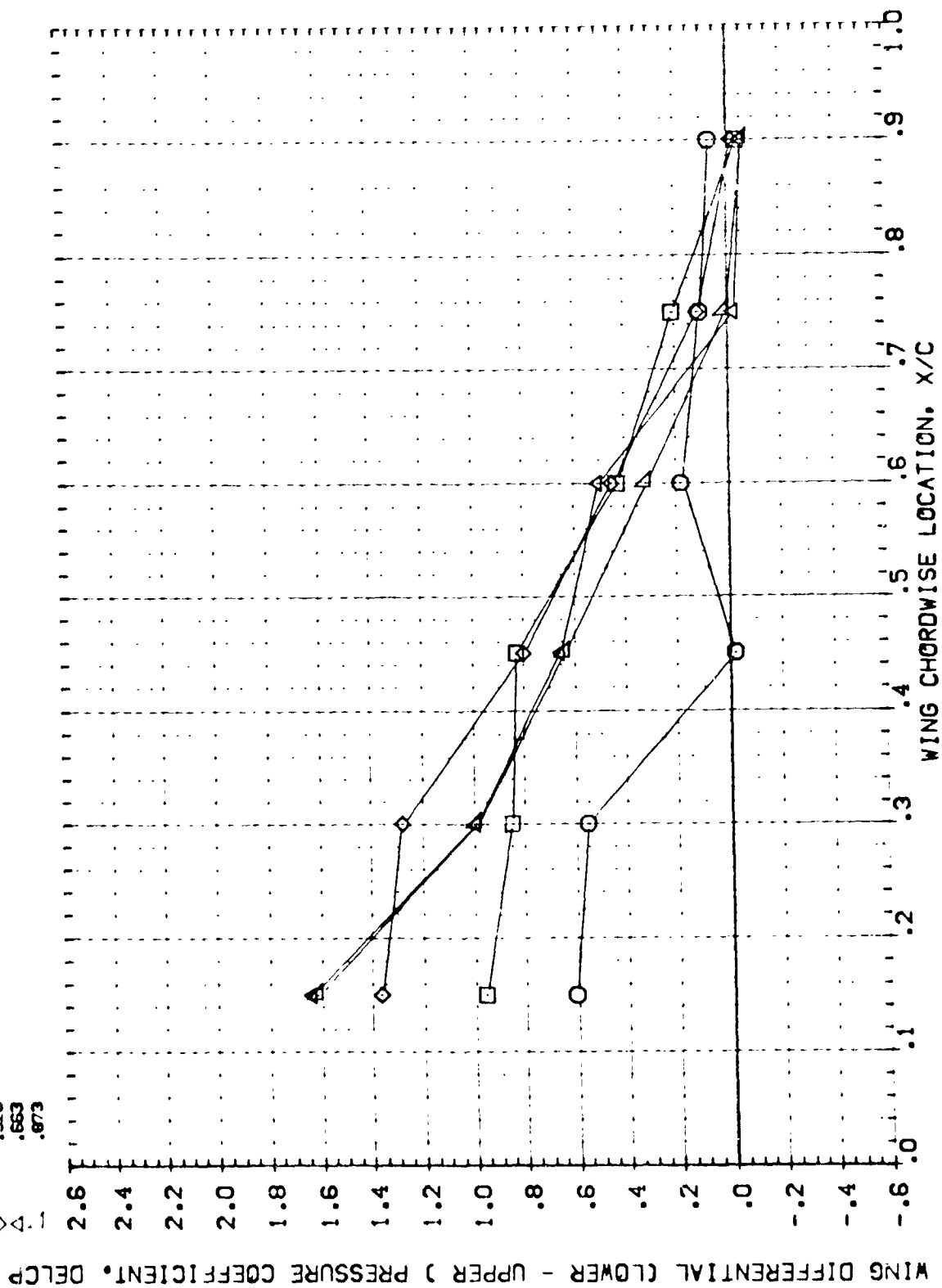


FIG 96 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON

| | | | | | | |
|--------|------|-------|------|-------------------|--------|---------|
| SYMBOL | 21/8 | ALPHA | MACH | PARAMETRIC VALUES | | |
| | .000 | .010 | .165 | BETA | PTN/P | 1.500 |
| | .334 | | | H/B | BOFLAP | -18.000 |
| | .520 | | | | | |
| | .653 | | | | | |
| | .873 | | | | | |

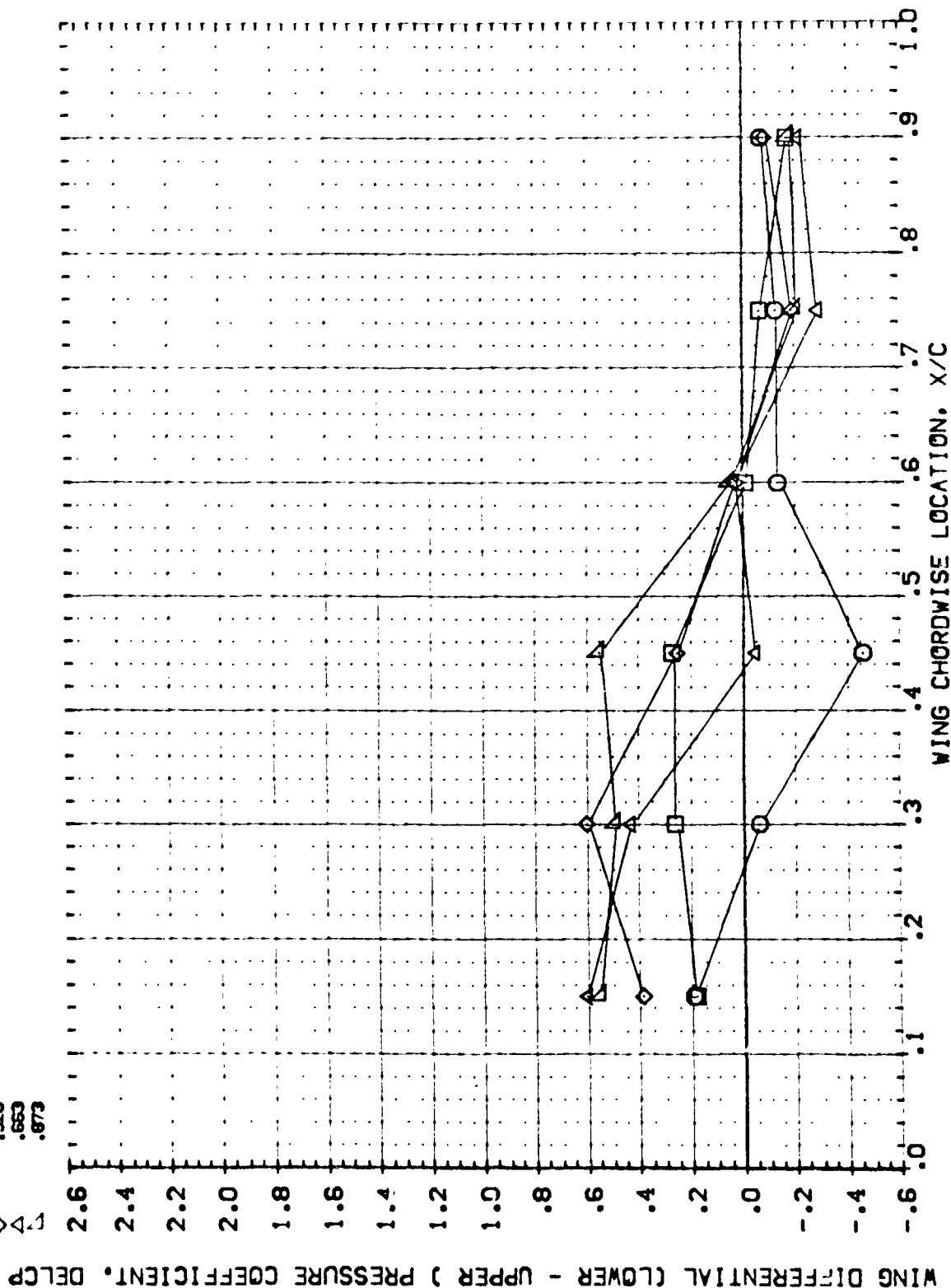


FIG 96 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J42 W87E18 WING TOTAL SURFACE (ADVW68)

PARAMETRIC VALUES
 BETA .000 PTN/P 1.500
 H/B .286 BOFLAP -18.000
 ELEVON .000

SYMBOL 21/8 ALPHA MACH
 .000 9.980 .165
 .304
 .520
 .653
 .873

WING DIFFERENTIAL (LOWER - UPPER) PRESSURE COEFFICIENT, DELCP

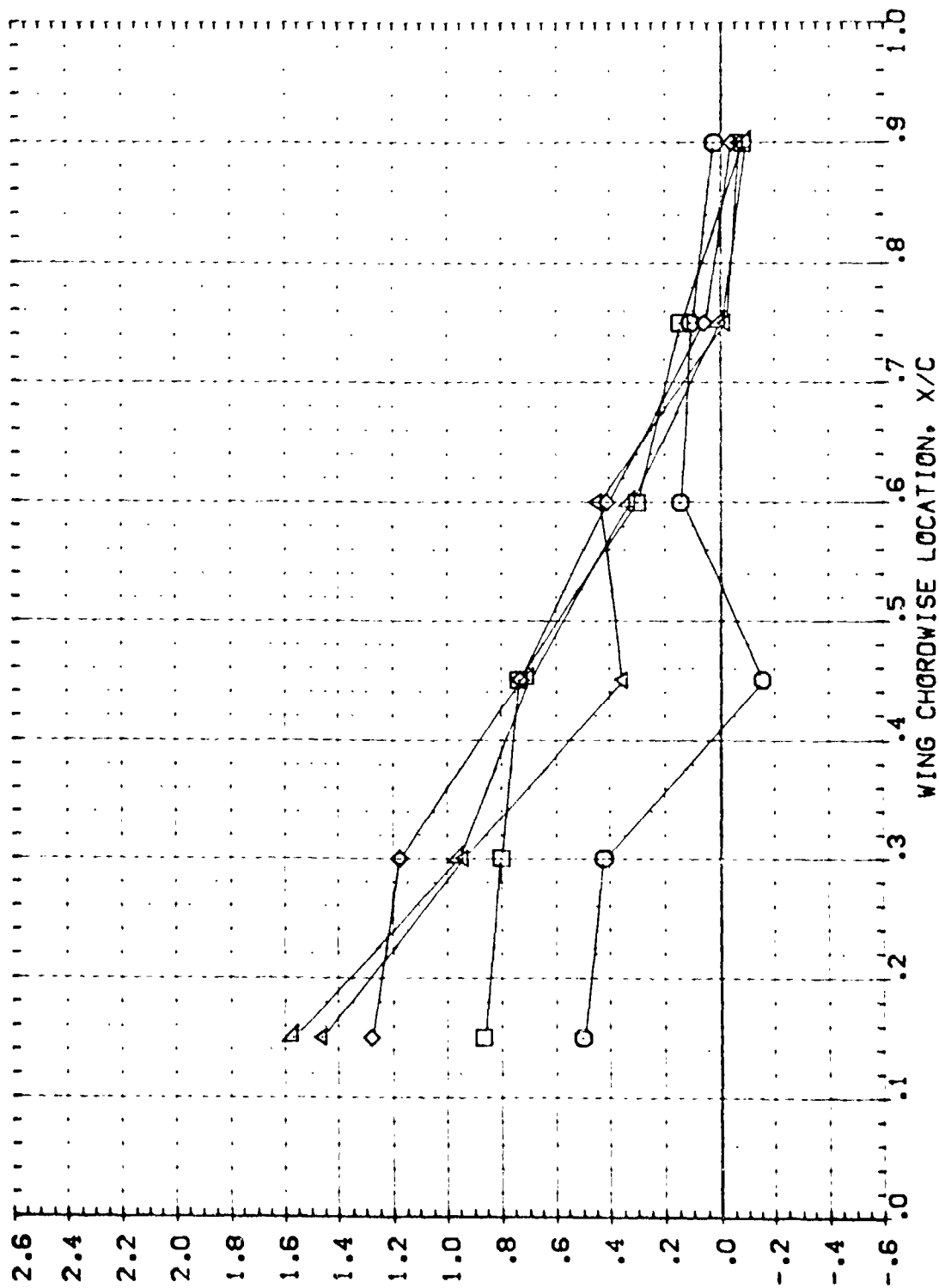


FIG 96 WING DIFFERENTIAL PRESSURE CHORDWISE DIST WITH J42, PTN/P=1.5, 0 ELEVON

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG42)

| | | | | | | |
|--------|--------|------|------|--------|-------|-------------------|
| SYMBOL | ALPHA | Z/H | MACH | BETA | PTN/P | PARAMETRIC VALUES |
| ○ | 9.900 | .000 | .165 | H/B | .000 | .000 |
| □ | 14.900 | | | ELEVON | .039 | 60FLAP |
| | | | | | | -15.000 |
| | | | | | | 1.000 |
| | | | | | | -18.000 |

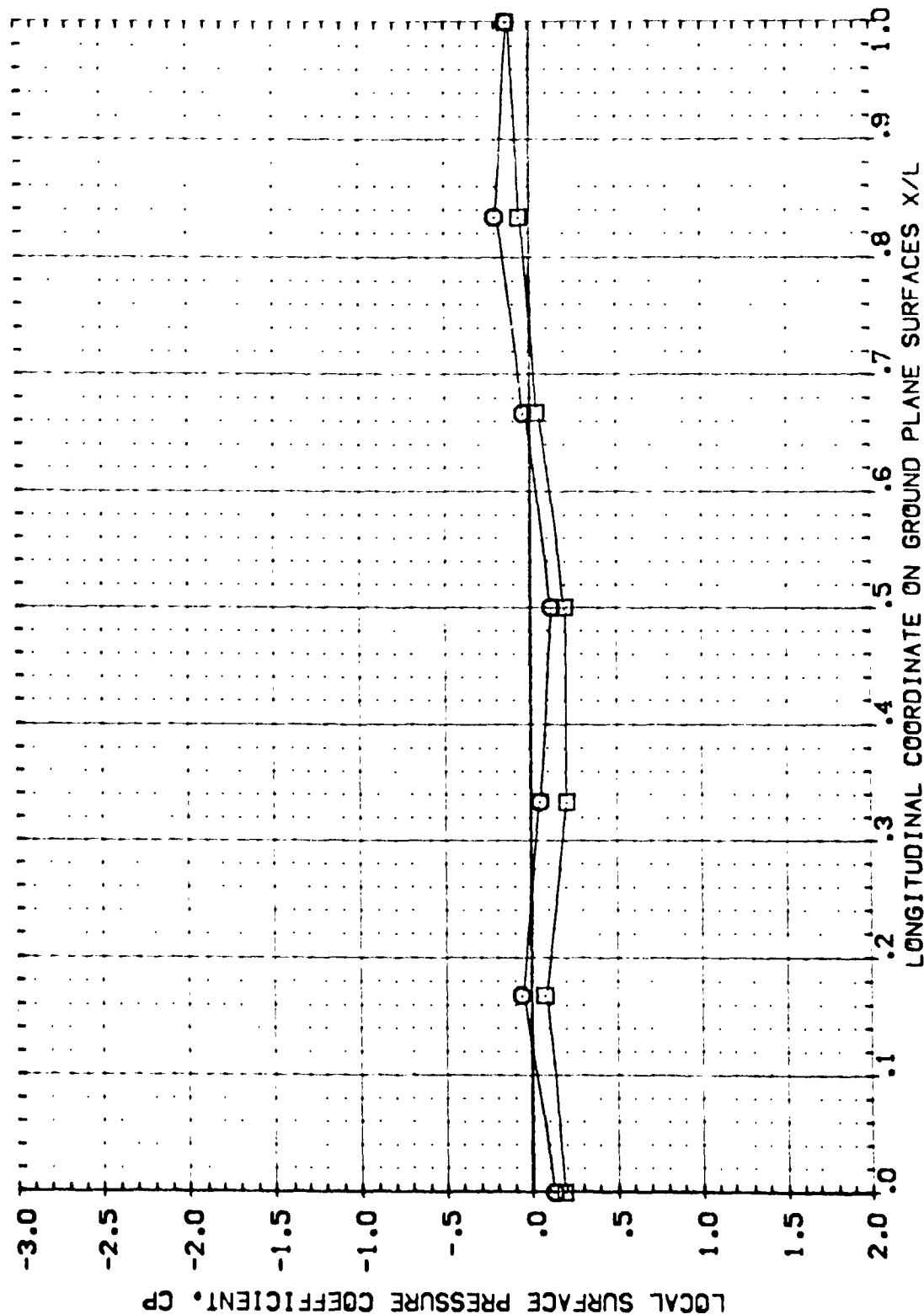


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE(RDVG45)

| SYMBOL | ALPHA | | 2Y/B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|--------|-------|------|------|------|------|--------|---------|-------------------|---------|
| | .000 | 9.900 | .000 | .163 | .000 | .125 | PTN/P | 1.000 | BD/LAP | -18.000 |
| ○ | 14.900 | | | | | | ELEVON | -15.000 | | |

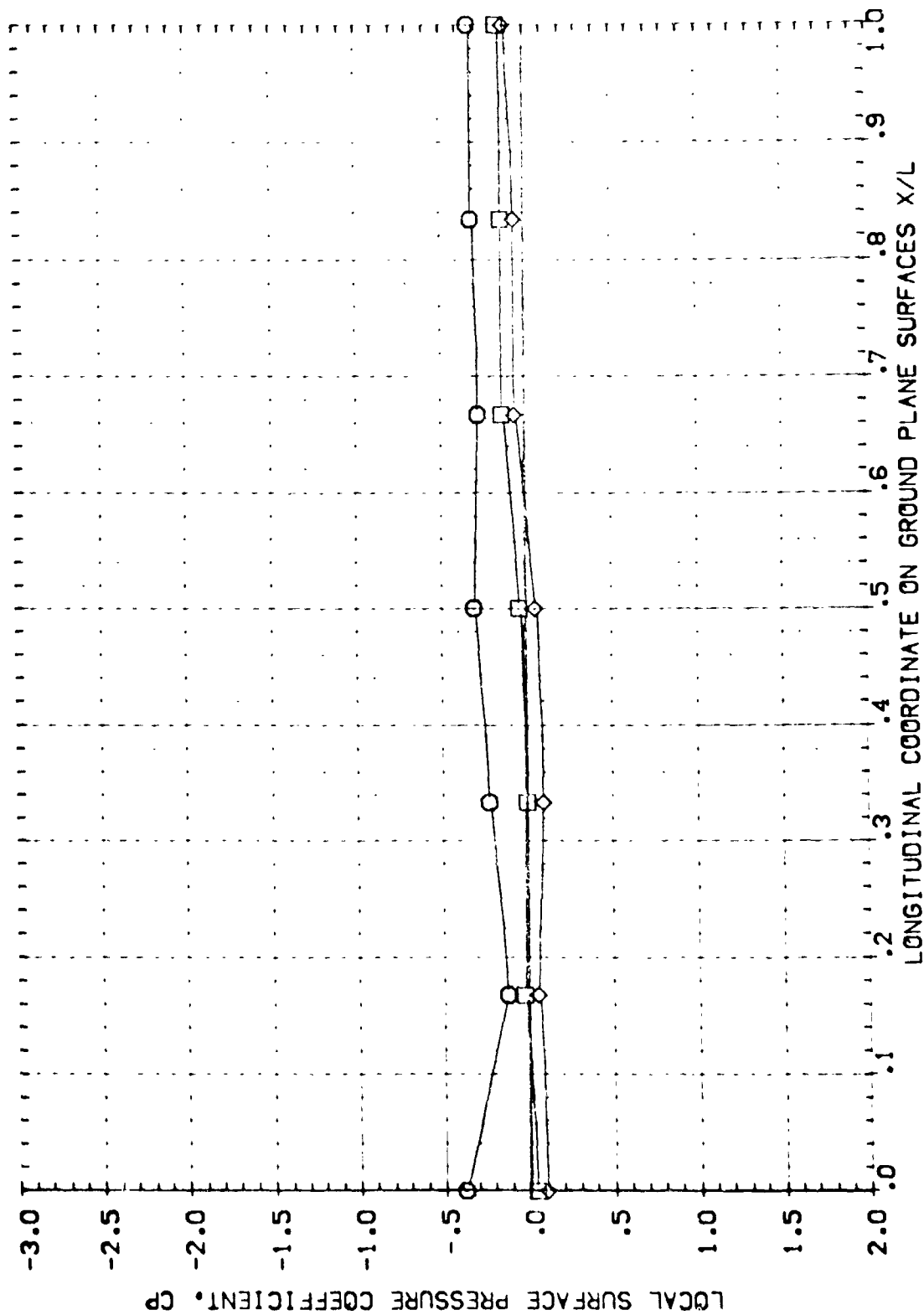


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG39)

| SYMBOL | ALPHA | | Z1/B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|--------|------|------|------|------|------|--------|-------------------|--------|
| | .000 | 10.000 | .000 | .000 | .185 | .185 | H/B | ELEVON | .000 | PTN/P |
| ○ | | | | | | | | | .286 | BOFLAP |
| □ | | | | | | | | | -15.000 | |
| ◇ | | | | | | | | | | 1.000 |

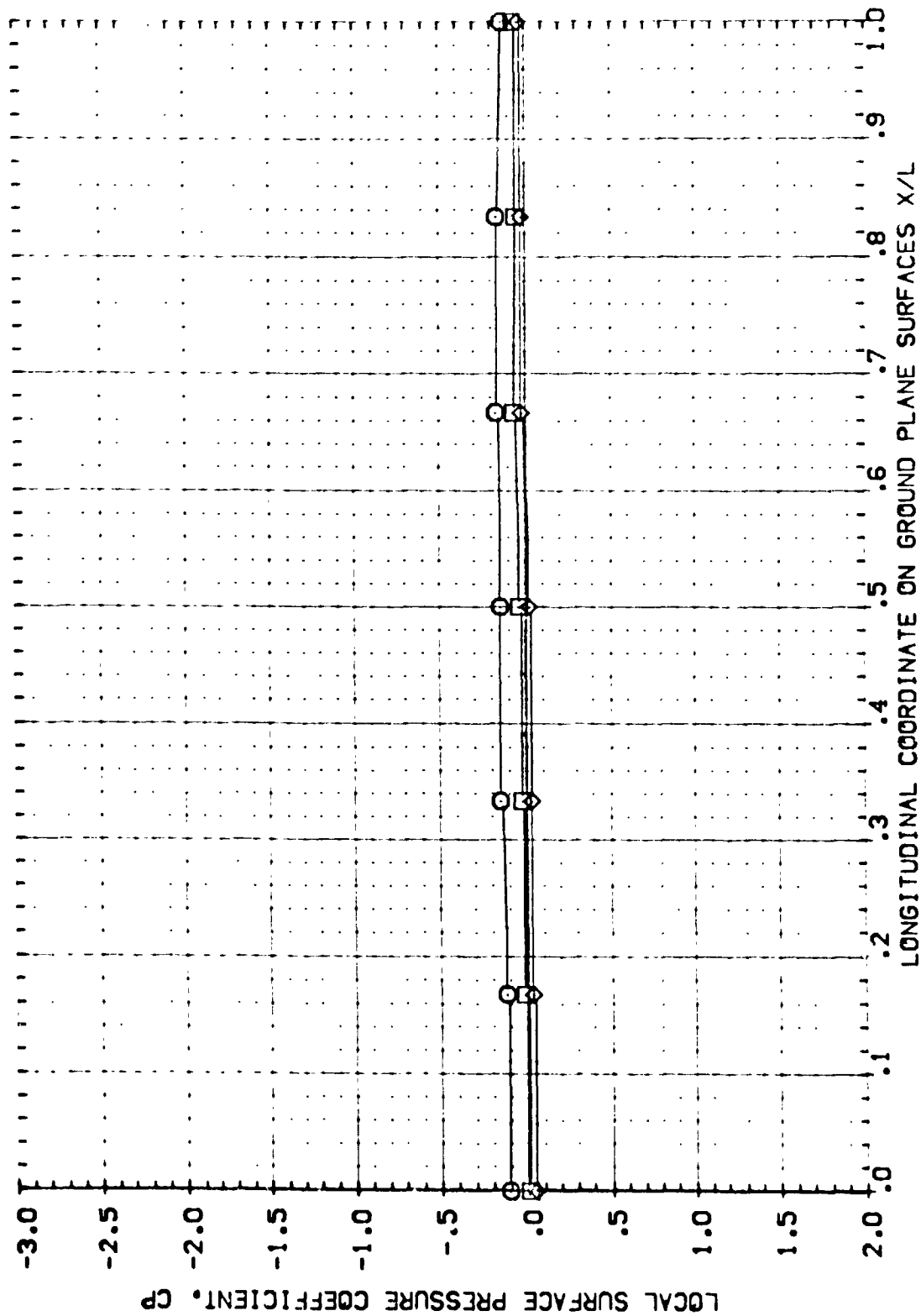


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B 816C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG03)

| SYMBOL | ALPHA | Z1/B | MACH | PARAMETRIC VALUES | | |
|--------|--------|------|------|-------------------|-------|---------|
| | | | | BETA | PTN/P | ELEVON |
| □ | 9.900 | .000 | .165 | H/B | .000 | 1.000 |
| □ | 15.000 | .000 | .165 | ELEVON | .039 | -18.000 |

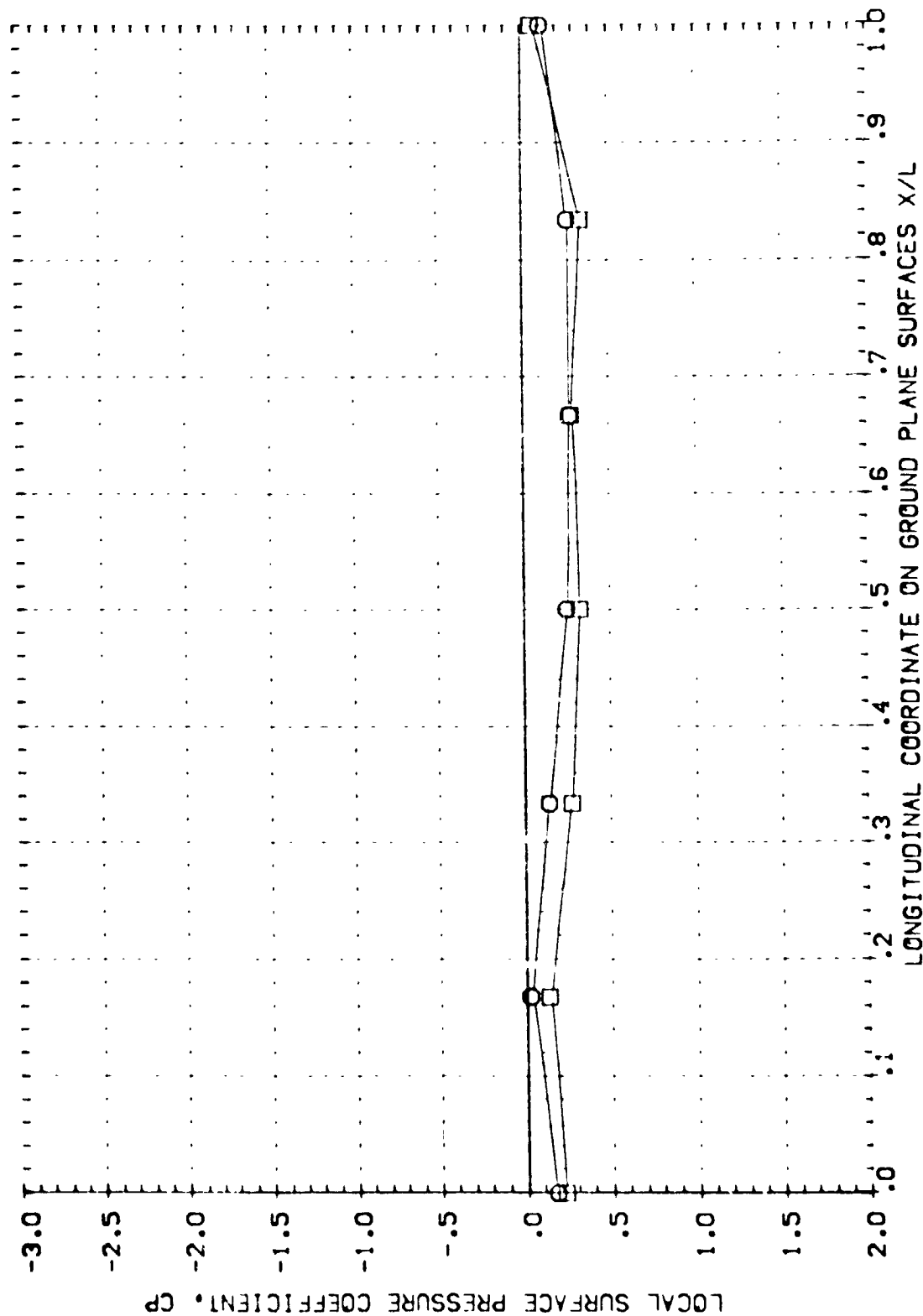


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG06)

| SYMBOL | ALPHA | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|--------|------|------|------|------|--------|-------------------|---------|
| | .000 | .000 | .000 | .165 | W/B | ELEVON | PTN/P | BDFLAP |
| ○ | 10.000 | | | | | | .000 | 1.000 |
| □ | 14.500 | | | | | | .125 | -18.000 |
| ◇ | | | | | | | .000 | |

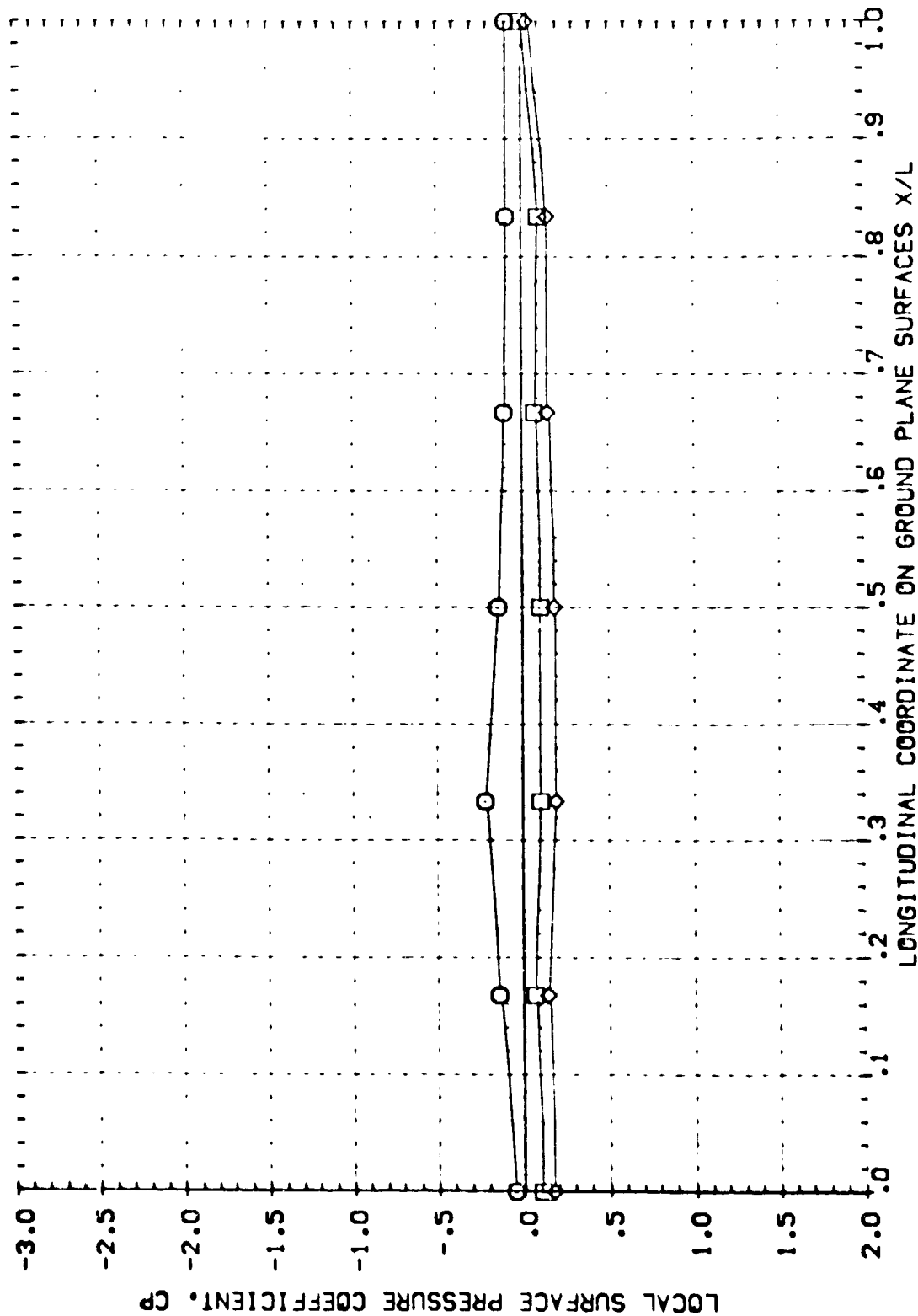


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG15)

| | | | | | | |
|--------|--------|------|------|--------|-------------------|---------|
| SYMBOL | ALPHA | ZY/B | MACH | BETA | PARAMETRIC VALUES | |
| ○ | .000 | .000 | .165 | H/B | .000 | PTN/P |
| ○ | 10.000 | | | ELEVON | .286 | BOFLAP |
| ○ | 14.500 | | | | .000 | -10.000 |

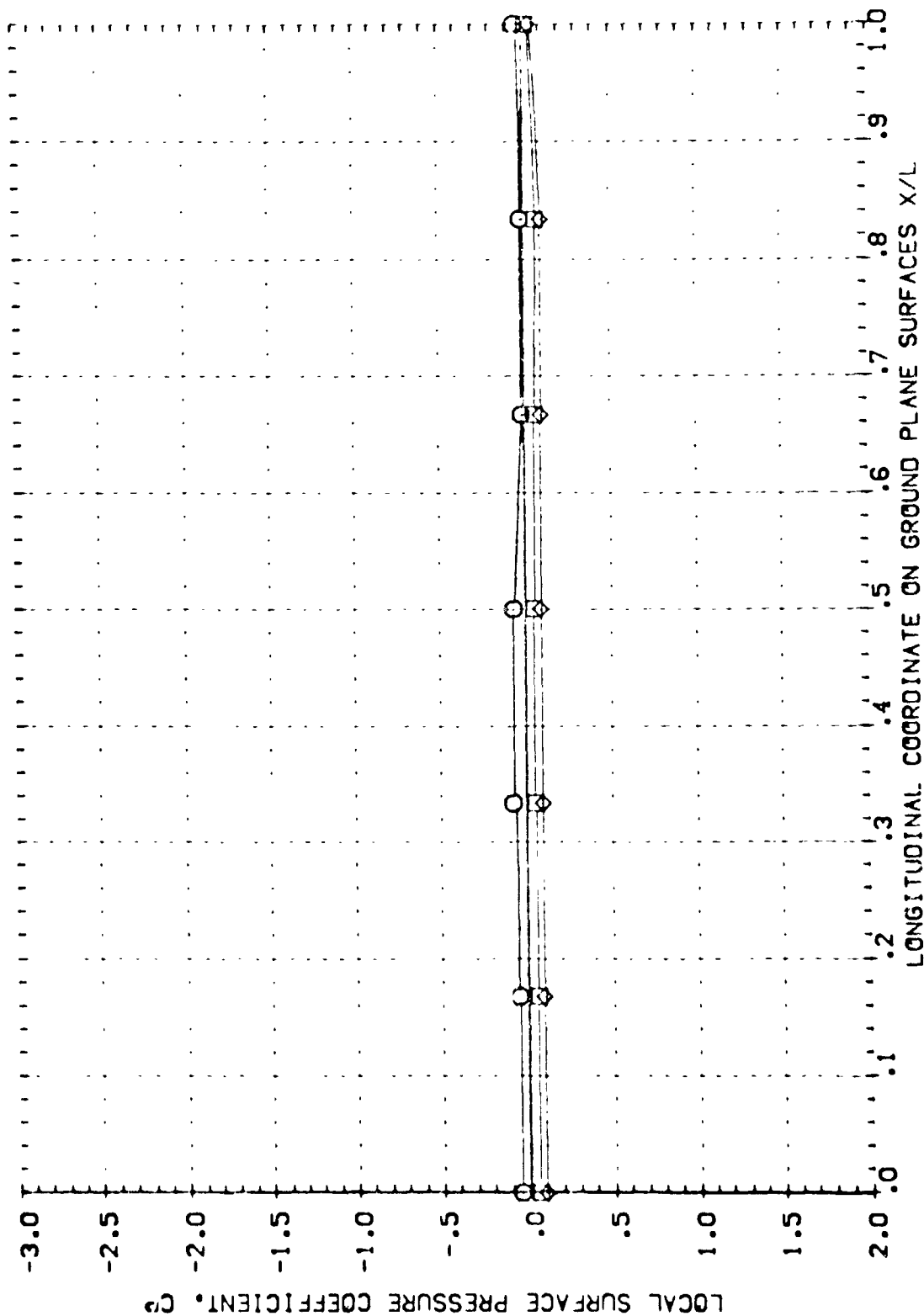


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B 816C5F1 J40 W87E18 GROUND PLANE SRFACE (ROVG33)

| | | | | | |
|--------|--------|------|------|--------|-------------------------|
| SYMBOL | ALPHA | 21/8 | W/8 | W/8 | PARAMETRIC VALUES |
| ○ | 10.000 | .000 | .165 | BETA | .000 P ^T N/P |
| □ | 14.900 | | | W/8 | .078 BOFLAP |
| | | | | ELEVON | 15.000 |
| | | | | | 1.000 |
| | | | | | -18.000 |

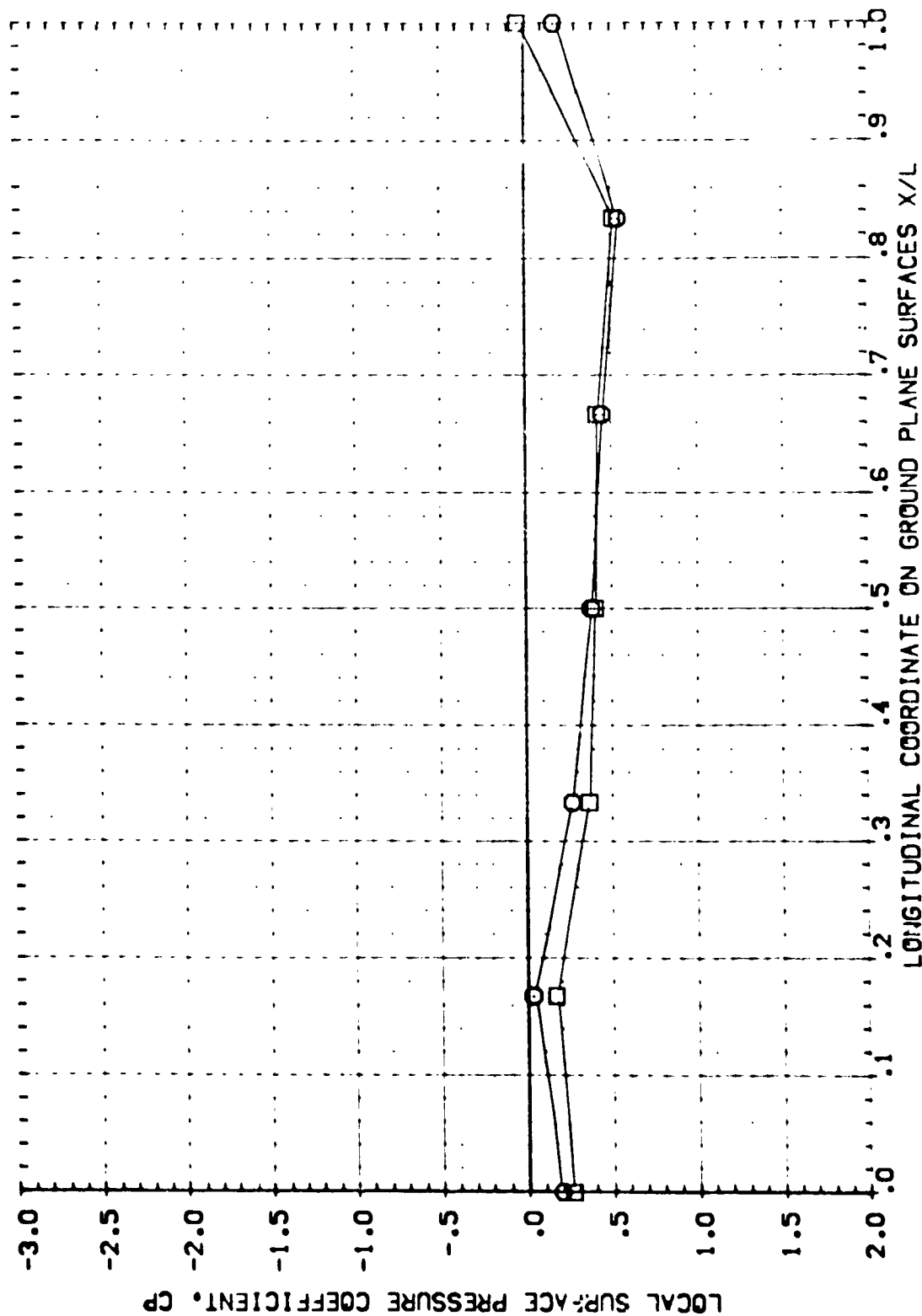


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT P^TN/P = 1.0

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG30)

| SYMBOL | ALPHA | | Z1/B | | MACH | | PARAMETRIC VALUES | | | |
|--------|-------|------|------|------|------|------|-------------------|-----|--------|---------|
| | .000 | .900 | .000 | .000 | .165 | .165 | BETA | H/B | ELEVON | PTN/P |
| ○ | .000 | .900 | .000 | .000 | .165 | .165 | | | | 1.000 |
| ◇ | .000 | .900 | .000 | .000 | .165 | .165 | | | | .125 |
| ◇ | .000 | .900 | .000 | .000 | .165 | .165 | | | | 80FLAP |
| ◇ | .000 | .900 | .000 | .000 | .165 | .165 | | | | -18.000 |
| ◇ | .000 | .900 | .000 | .000 | .165 | .165 | | | | 15.000 |

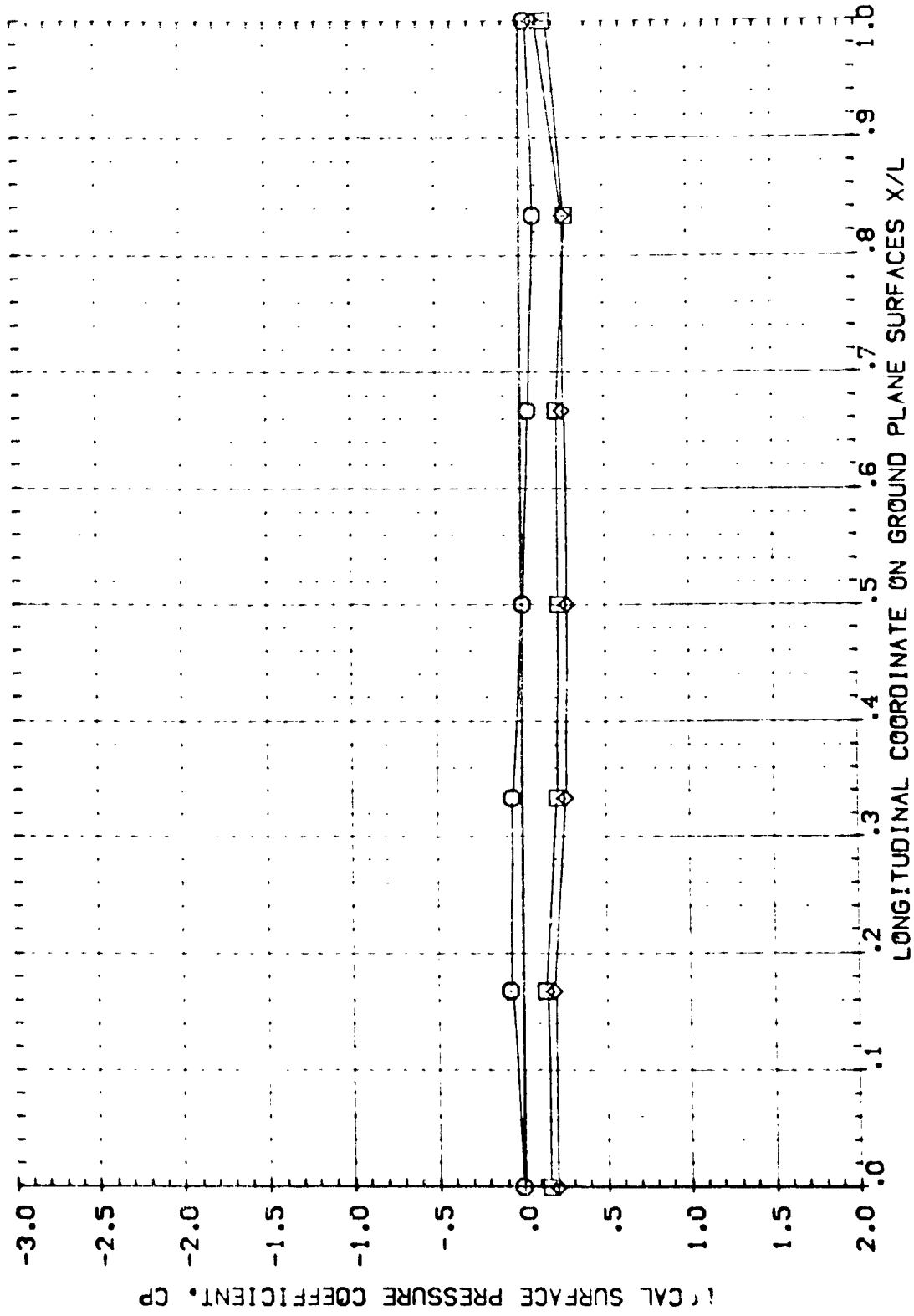


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG36)

| | | | | | | | |
|--------|--------|-------|------|------|-------|--------|--------|
| SYMBOL | ALPHA | Z/Y/B | MACH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | .000 | .165 | H/B | .000 | .206 | 15.000 |
| □ | 9.500 | | | | | | |
| ◇ | 15.000 | | | | | | |

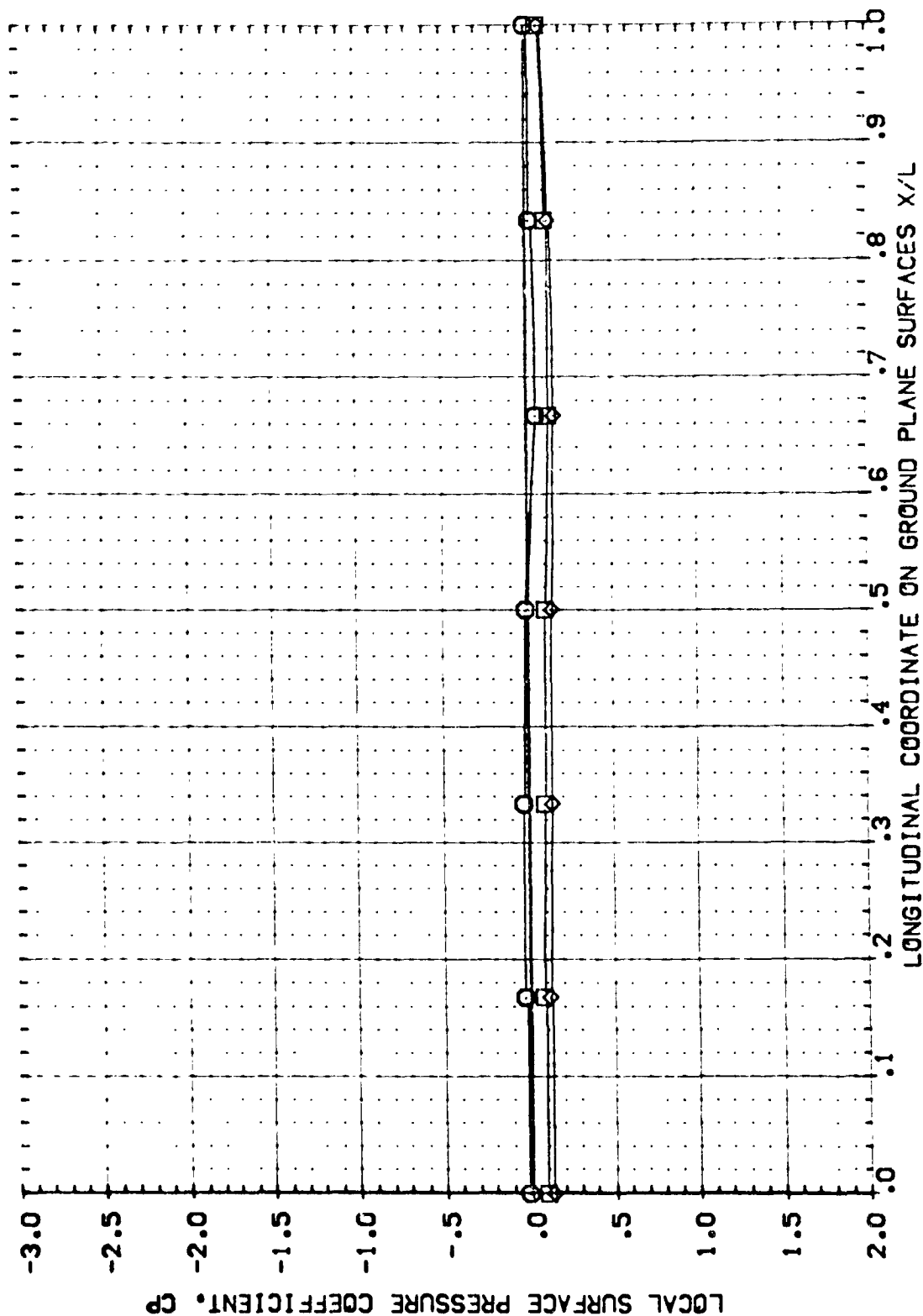


FIG 97 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.0

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG41)

| | | | | | | |
|--------|--------|------|------|-------------------|---------|---------|
| SYMBOL | ALPHA | 2Y/B | MACH | PARAMETRIC VALUES | | |
| | 9.900 | .000 | .165 | BETA | PTN/P | 1.300 |
| | 11.900 | | | H/B | BOFLAP | -18.000 |
| | | | | ELEVON | -15.000 | |

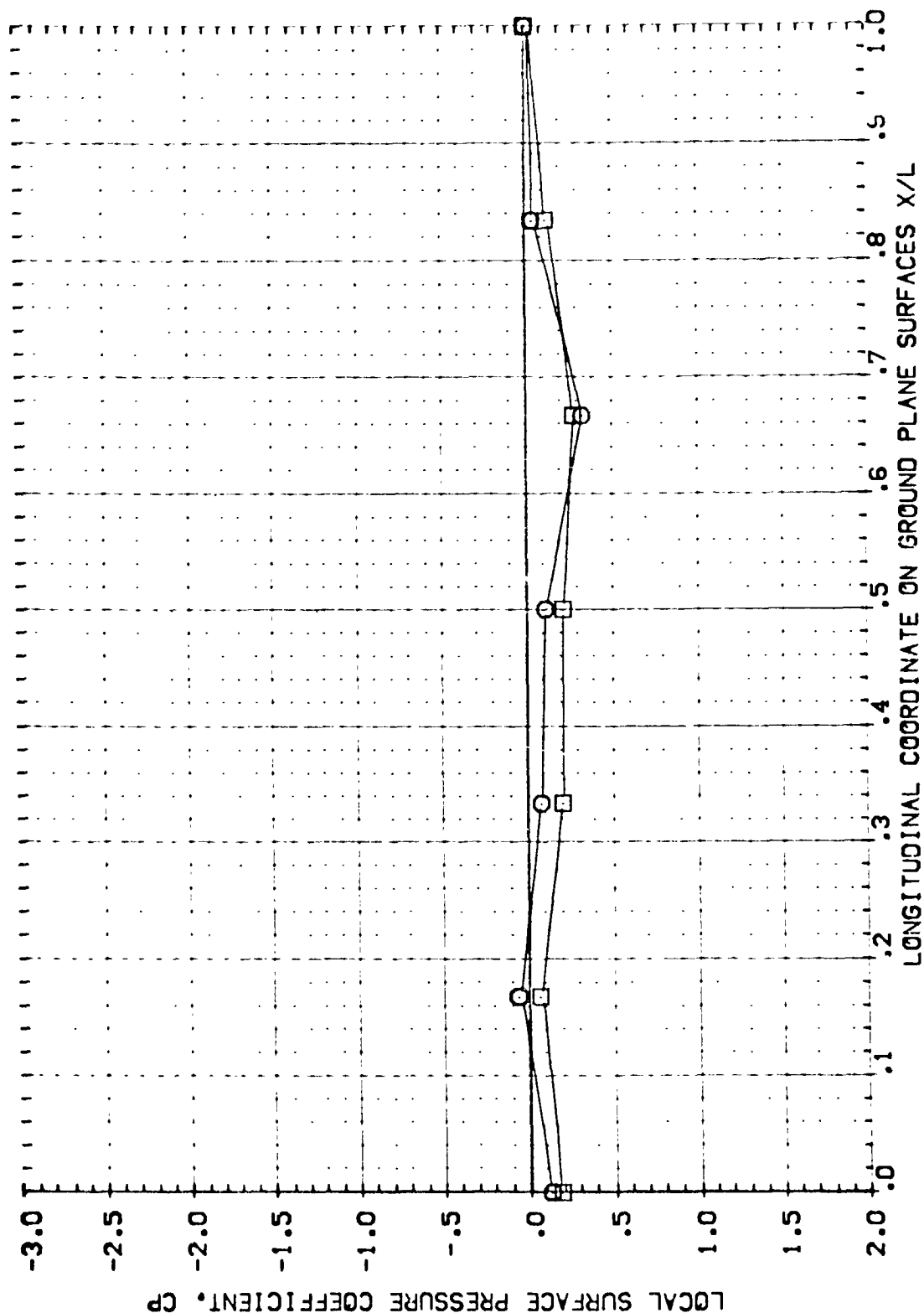


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG44)

| | | | | | | | |
|--------|--------|------|------|--------|---------|--------|-------------------|
| SYMBOL | ALPHA | 2Y/B | MACH | BETA | PTN/P | BOFLAP | PARAMETRIC VALUES |
| ○ | .000 | .000 | .165 | H/B | .000 | .175 | |
| □ | 9.900 | | | ELEVON | -15.000 | | |
| ◇ | 14.900 | | | | | | |

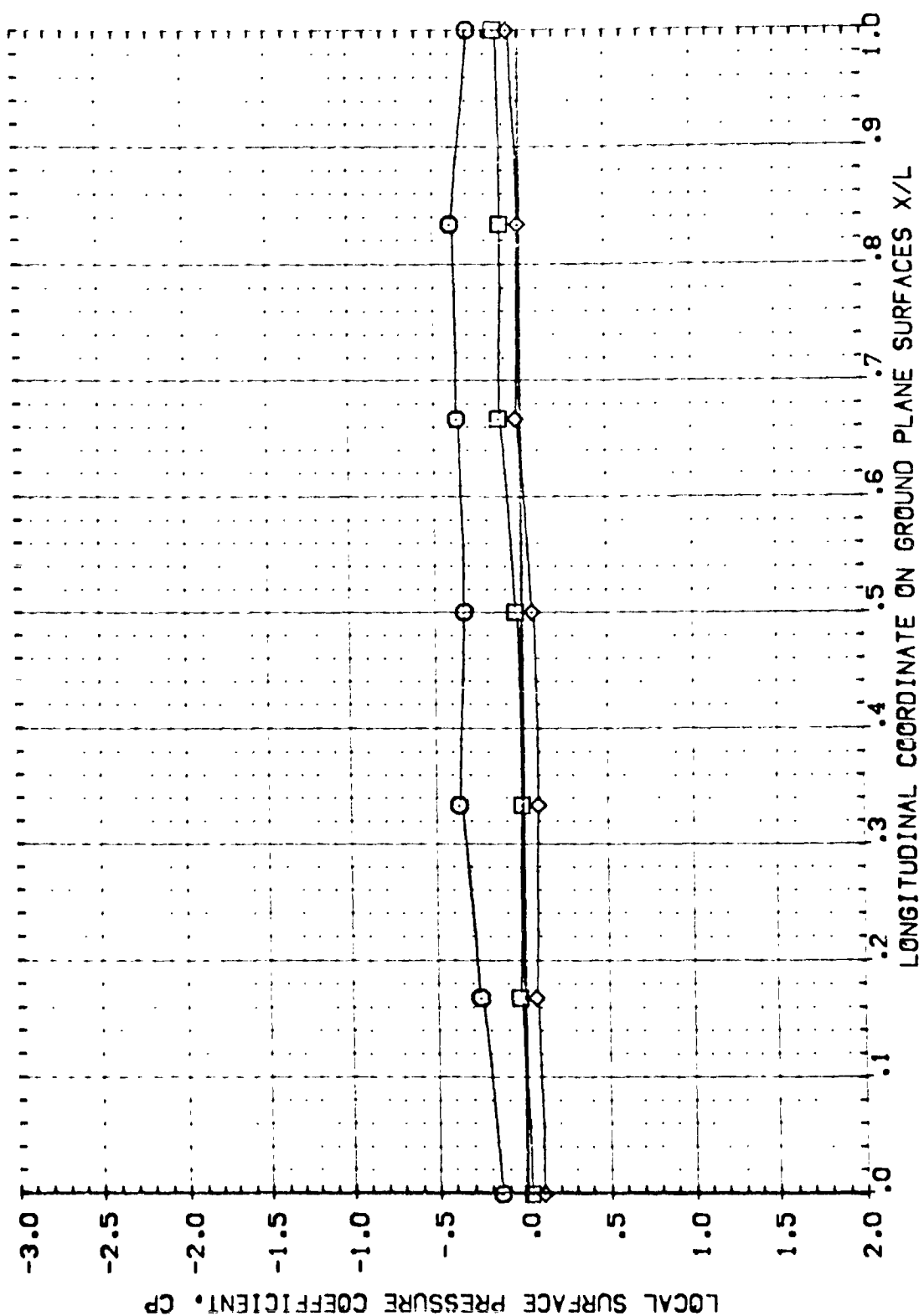


FIG 93 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG38)

| | | | | | | | |
|--------|--------|------|------|------|---------|--------|--------|
| SYMBOL | ALPHA | ZI/B | MACH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | .000 | .165 | H/B | .000 | | |
| ◇ | 10.000 | | | | .265 | | |
| | 14.900 | | | | -15.000 | | |

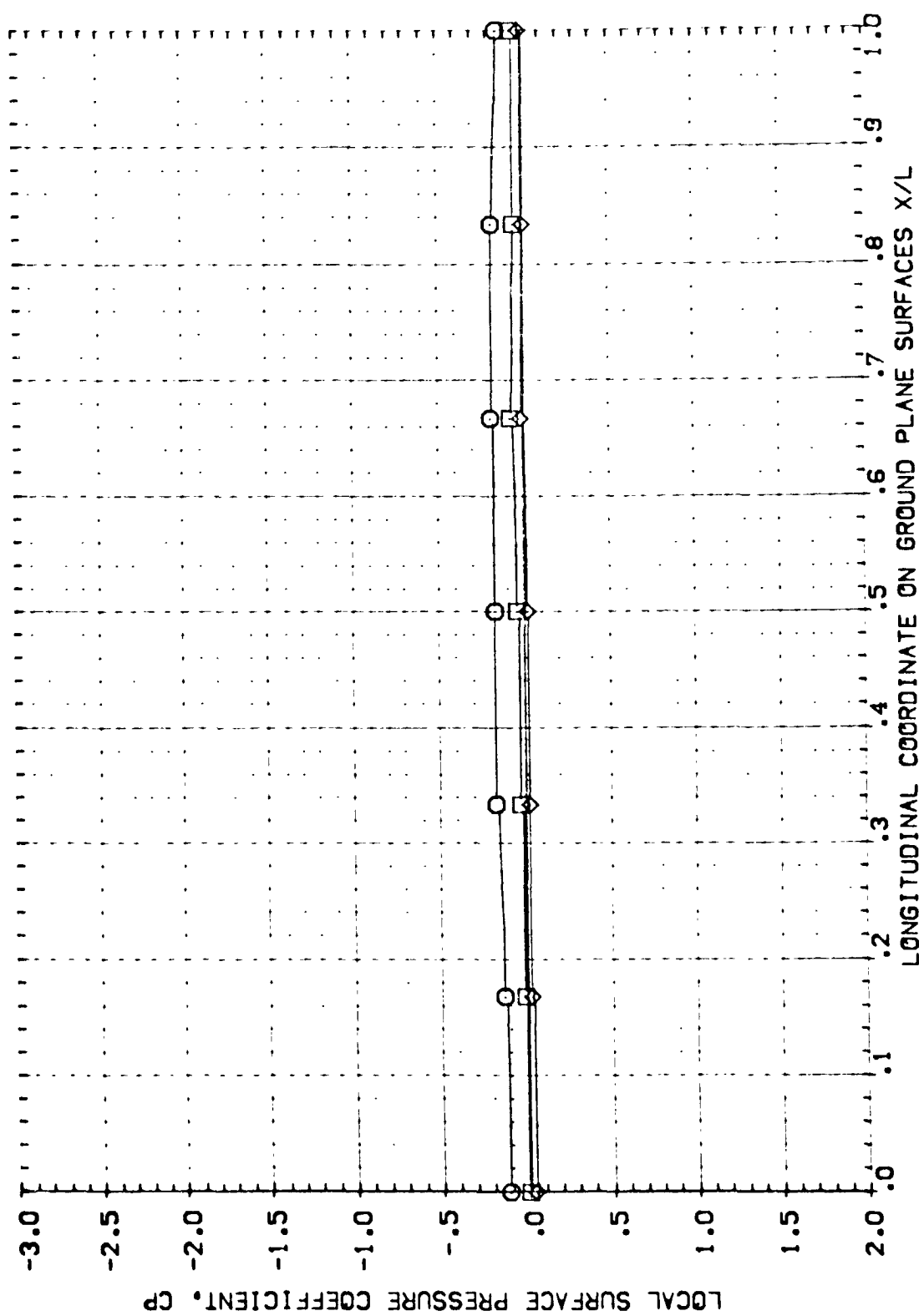


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG04)

| | | | | | | |
|--------|--------|---------------|------|-------------------|--------|---------|
| SYMBOL | ALPHA | 2 γ /B | MACH | PARAMETRIC VALUES | | |
| □ | 9.900 | .000 | .165 | BETA | PTN/P | 1.300 |
| ○ | 15.000 | | | H/B | BDFLAP | -10.000 |
| | | | | ELEVON | | .000 |

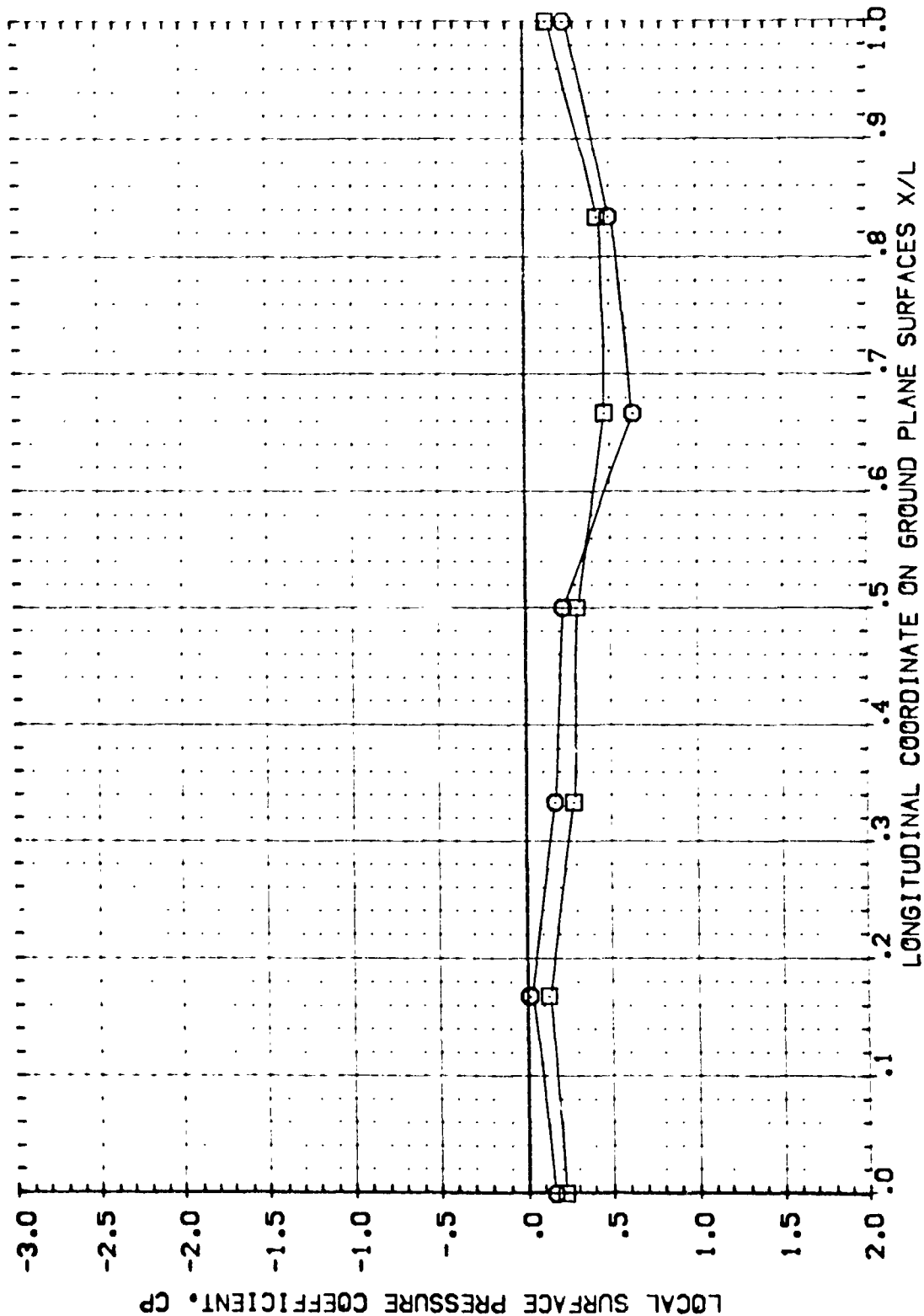


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3



0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG07)

| SYMBOL | ALPHA | | 2 γ /B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|--------|---------------|------|------|--|------|--------|-------------------|---------|
| | 9.500 | 14.500 | .000 | .000 | .165 | | W/B | ELEVON | PTN/P | 80FLAP |
| ○ | | | | | | | | | .000 | .000 |
| ◇ | | | | | | | | | .125 | .000 |
| | | | | | | | | | 1.300 | -18.000 |

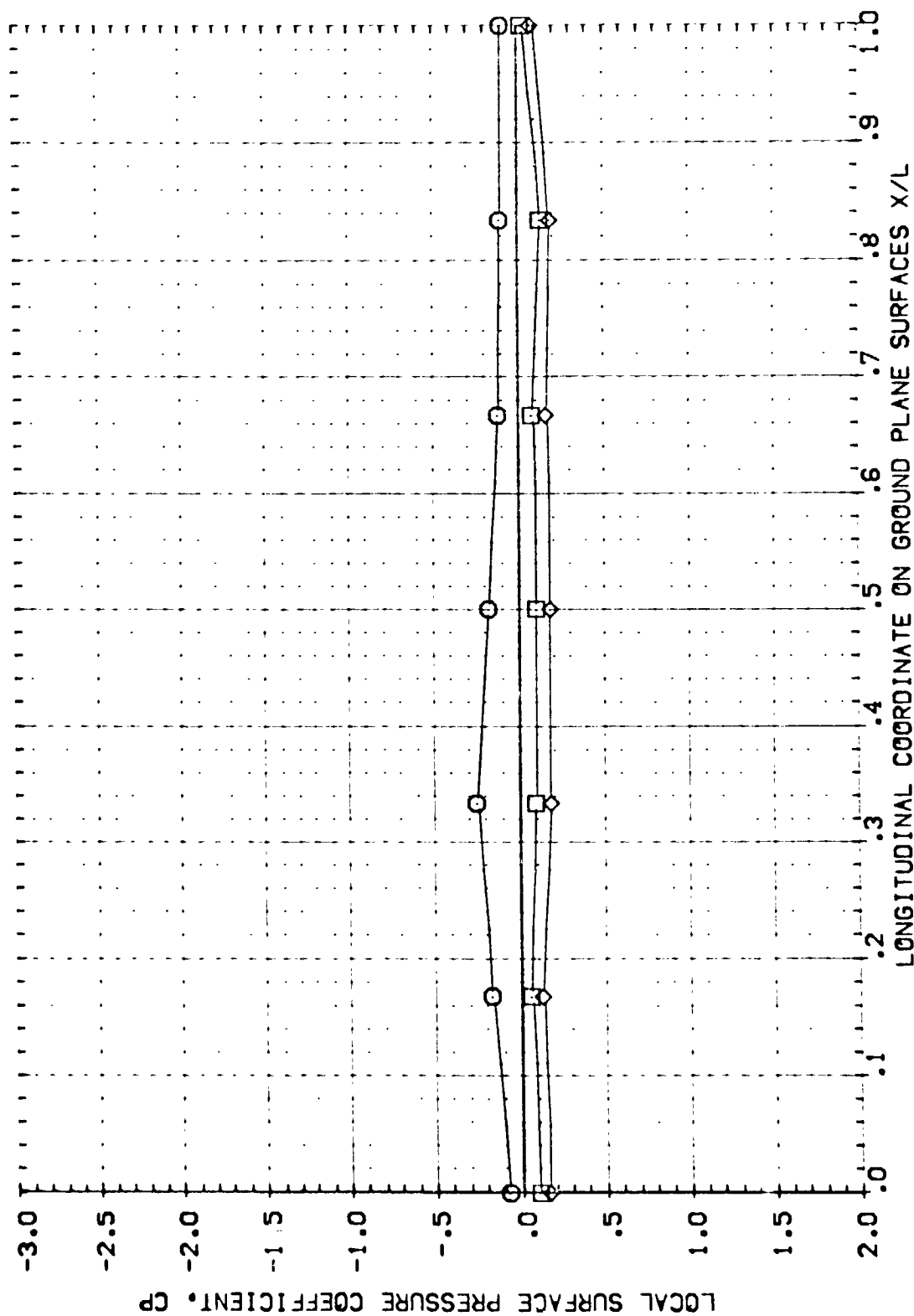


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3

0A57-B 816C5F1 J40 W87E18 GROUND PLANE SRFACE(RDVG17)

| SYMBOL | PARAMETRIC VALUES | | |
|--------|-------------------|---------|------|
| | ALPHA | 2V/B | MACH |
| | ○ | .000 | .165 |
| | ◇ | 9.500 | |
| | BETA | | |
| | H/B | ELEVON | |
| | ○ | .000 | |
| | ◇ | .286 | |
| | PTN/P | | |
| | BOFLAP | | |
| | ○ | 1.300 | |
| | ◇ | -18.000 | |

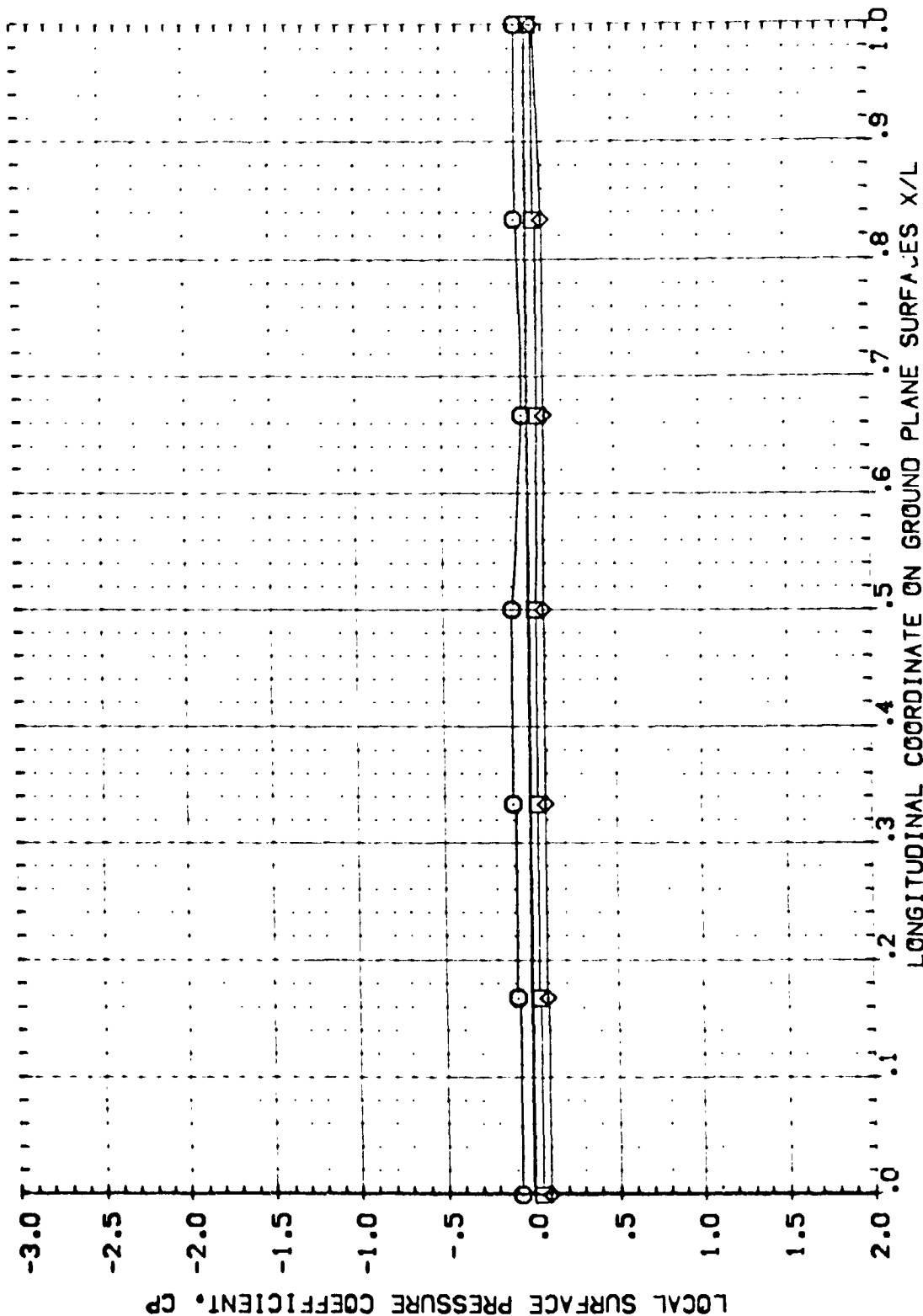


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE(RDVG32)

| SYMBOL | ALPHA | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|--------|------|------|------|--------|-------------------|---------|
| | 8.900 | 14.900 | 21/8 | .000 | H/8 | ELEVON | .000 | PTN/P |
| ○ | | | | | | | .039 | BOFLAP |
| | | | | | | | 15.000 | -18.000 |

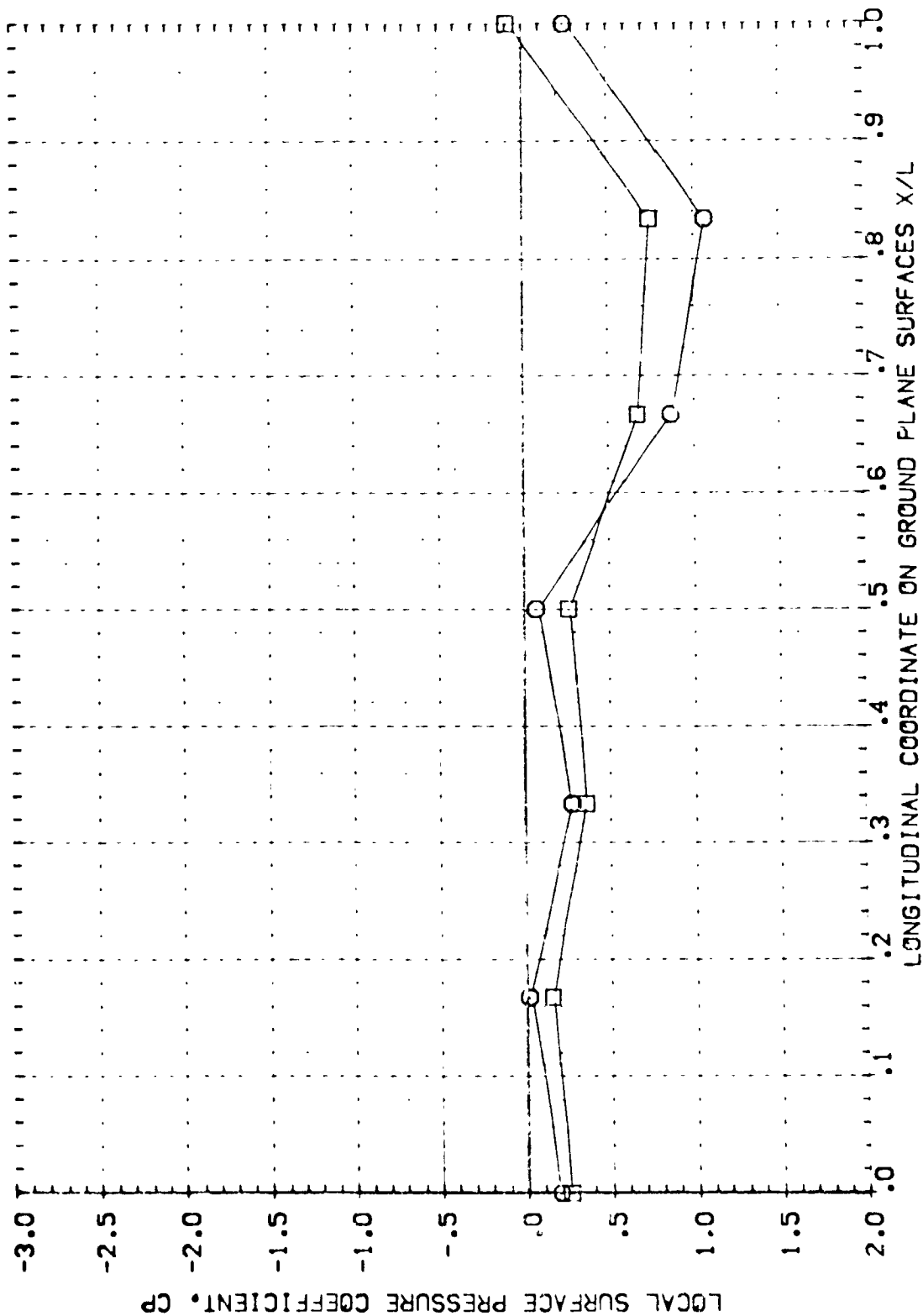


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3

0A57-B B16C5F1 J40 W97E18 GROUND PLANE SRFACE (RDVG29)

| SYMBOL | ALPHA | | ZETA | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|-------|-------|-------|-------|--|------|--------|-------------------|---------|
| | 0.000 | 9.900 | 0.000 | 0.000 | 0.165 | | H/B | ELEVON | PTN/P | BOFLAP |
| ○ | | | | | | | | 15.000 | 1.300 | -16.000 |
| □ | | | | | | | | | | |
| ◇ | | | | | | | | | | |

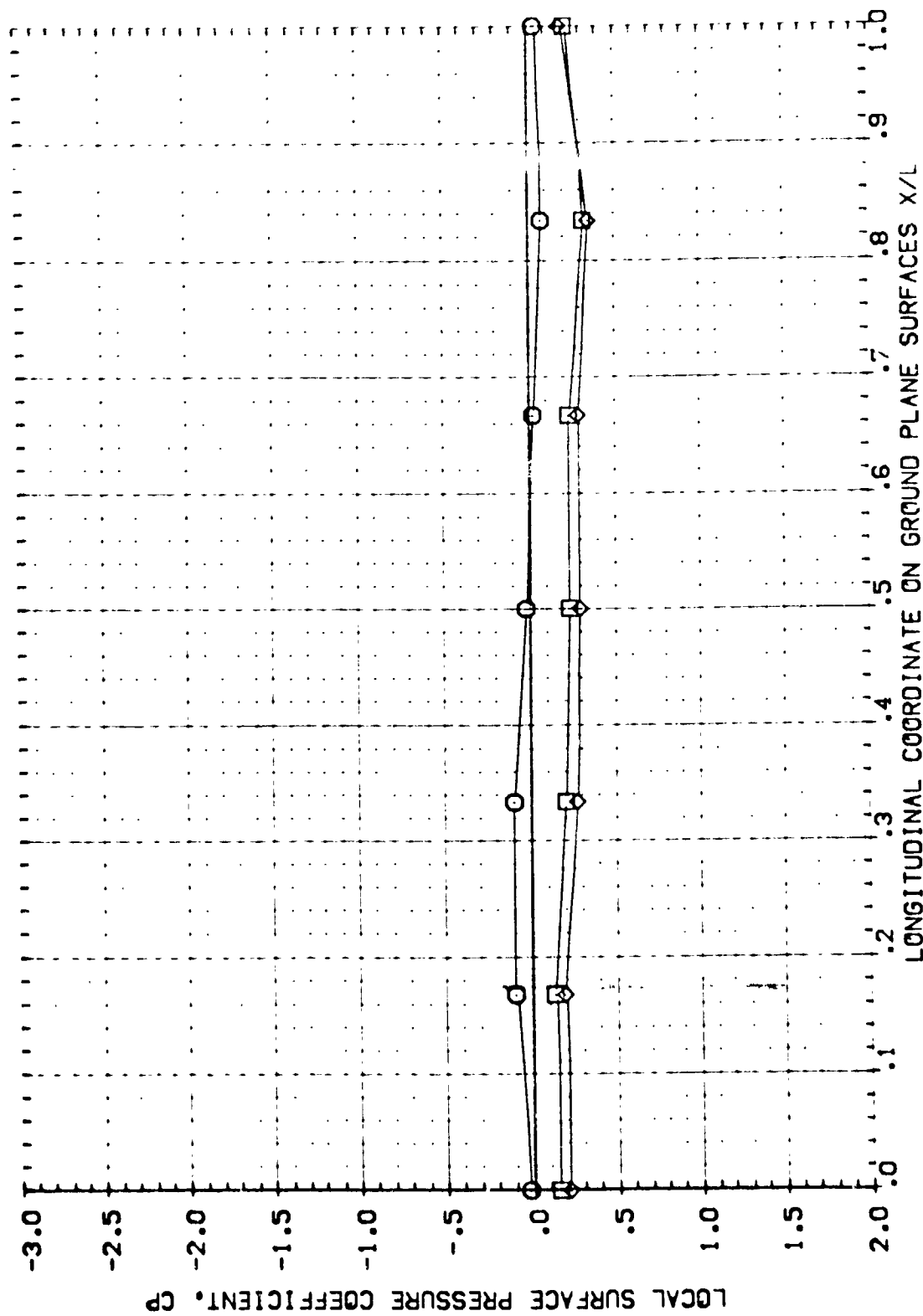


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT P N/P = 1.3

0A57-B 816C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG35)

| SYMBOL | ALPHA | 2 γ /8 | MACH | PARAMETRIC VALUES | | | |
|--------|--------|---------------|------|-------------------|--------|---------|--|
| ○ | .000 | .000 | .165 | BETA | PTN/P | 1.300 | |
| ◇ | 9.900 | | | H/B | BOFLAP | -18.000 | |
| | 14.900 | | | ELEVON | | 15.000 | |

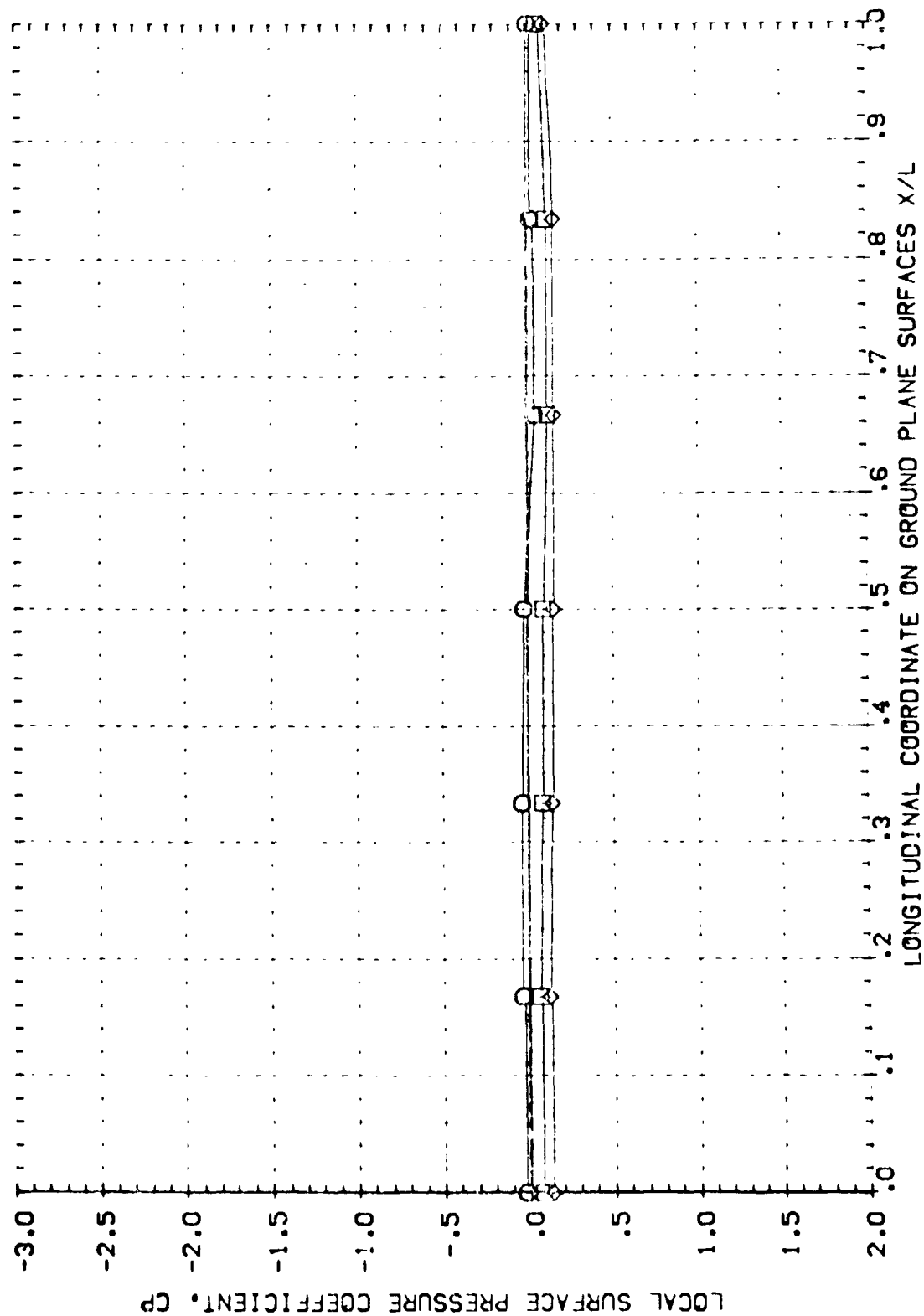


FIG 98 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.3

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG40)

| | | | | | | |
|--------|--------|------|------|-------------------|---------|---------|
| SYMBOL | ALPHA | 21/8 | MACH | PARAMETRIC VALUES | | |
| | 9.500 | .000 | .165 | BETA | .000 | PTN/P |
| | 14.500 | | | M/B | .038 | BOFLAP |
| | | | | ELEVON | -15.000 | -18.000 |

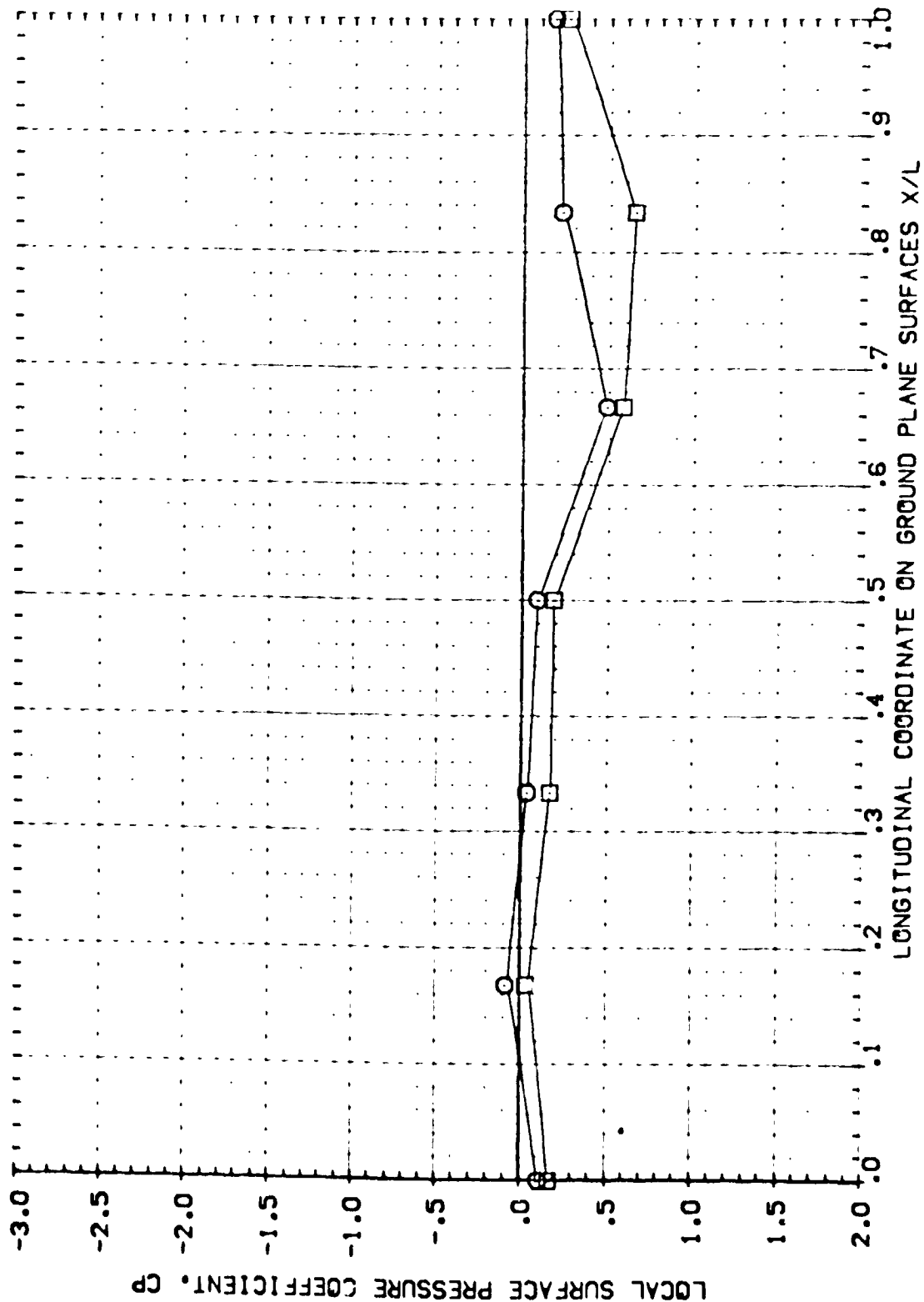


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

0A57-B 8:605F1 J40 W87E18 GROUND PLANE SRFACE (RDVG43)

| | | | | | | |
|------|--------|-------|------|--------|-------|-------------------|
| SLIP | ALPHA | 2Y/B | MACH | BETA | PN/P | PARAMETRIC VALUES |
| 0.0 | 1.000 | 1.000 | .165 | 1.9 | 1.000 | 1.500 |
| 0.0 | 9.000 | | | ELEVON | .125 | -18.000 |
| 0.0 | 14.900 | | | | 0.000 | -15.000 |

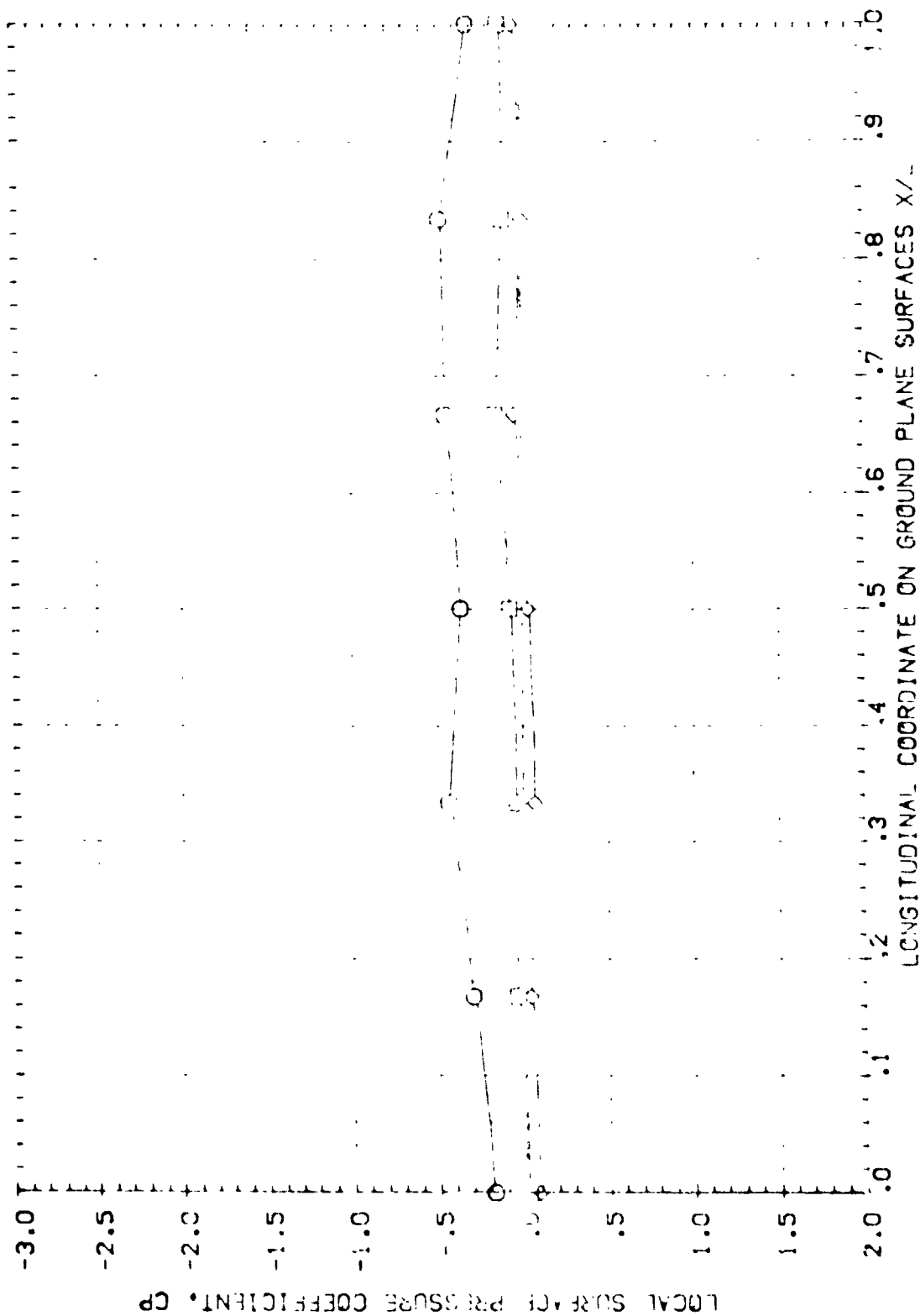


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT P_N/P = 1.5

0A57-9 816C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG37)

| | | | | | | |
|--------|--------|------|------|--------|---------|-------------------|
| SYMBOL | ALPHA | 2Y/B | H/8 | BETA | PTN/P | PARAMETRIC VALUES |
| ○ | .000 | .000 | .185 | H/8 | .000 | 1.500 |
| ○ | 9.500 | | | ELEVON | .286 | -18.000 |
| ○ | 14.500 | | | | -15.000 | |

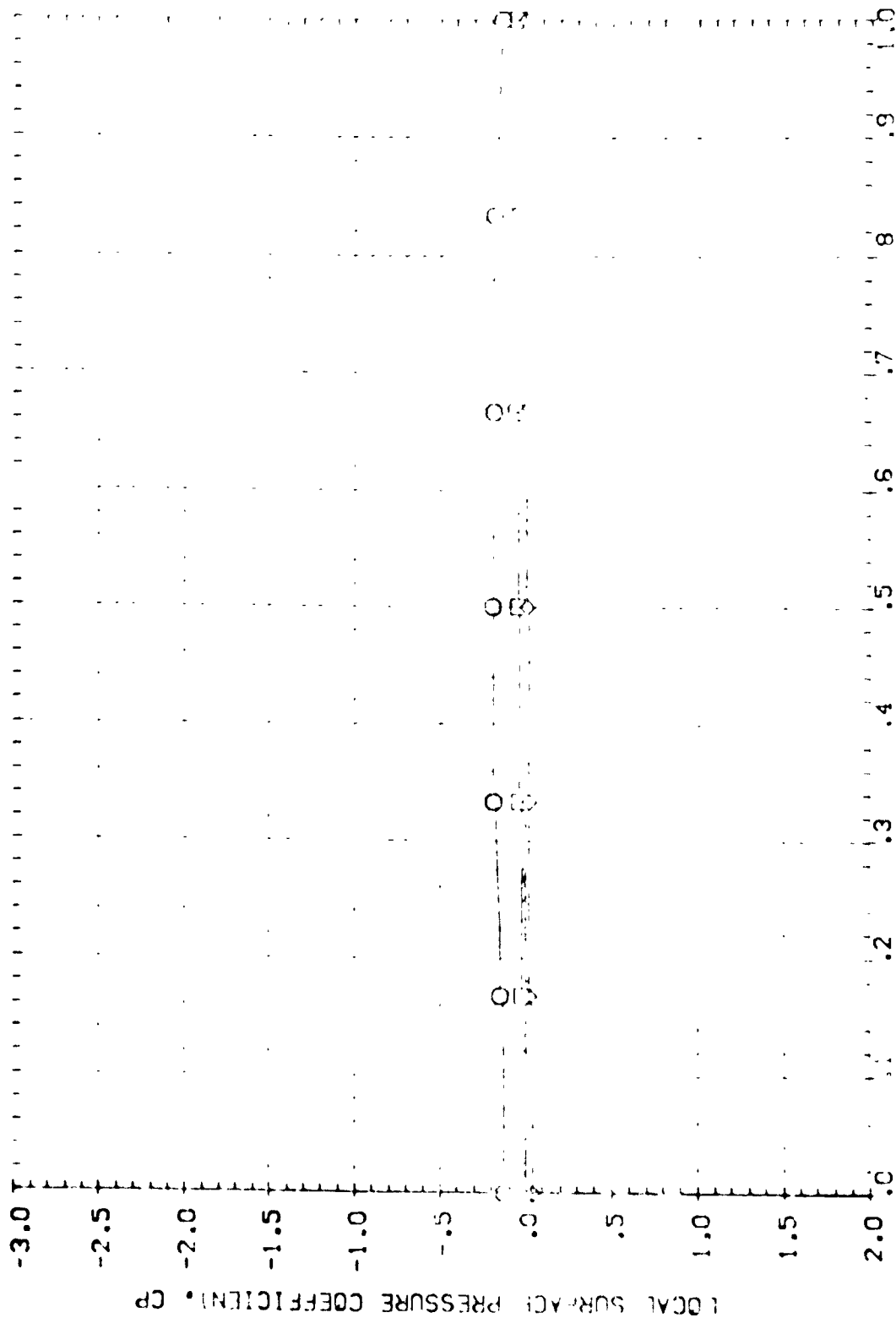


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

PAI = 472

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVGGJ)

| | | | | | | |
|--------|-----------------|------|------|-------------------|-------|------------------|
| SYMBOL | ALPHA | 2V/B | MACH | PARAMETRIC VALUES | | |
| | 9.900 14.900 | .000 | .165 | BETA H/B | PTN/P | 1.500 -18.000 |
| | | | | BOFLAP | | |
| | | | | ELEVON | | |

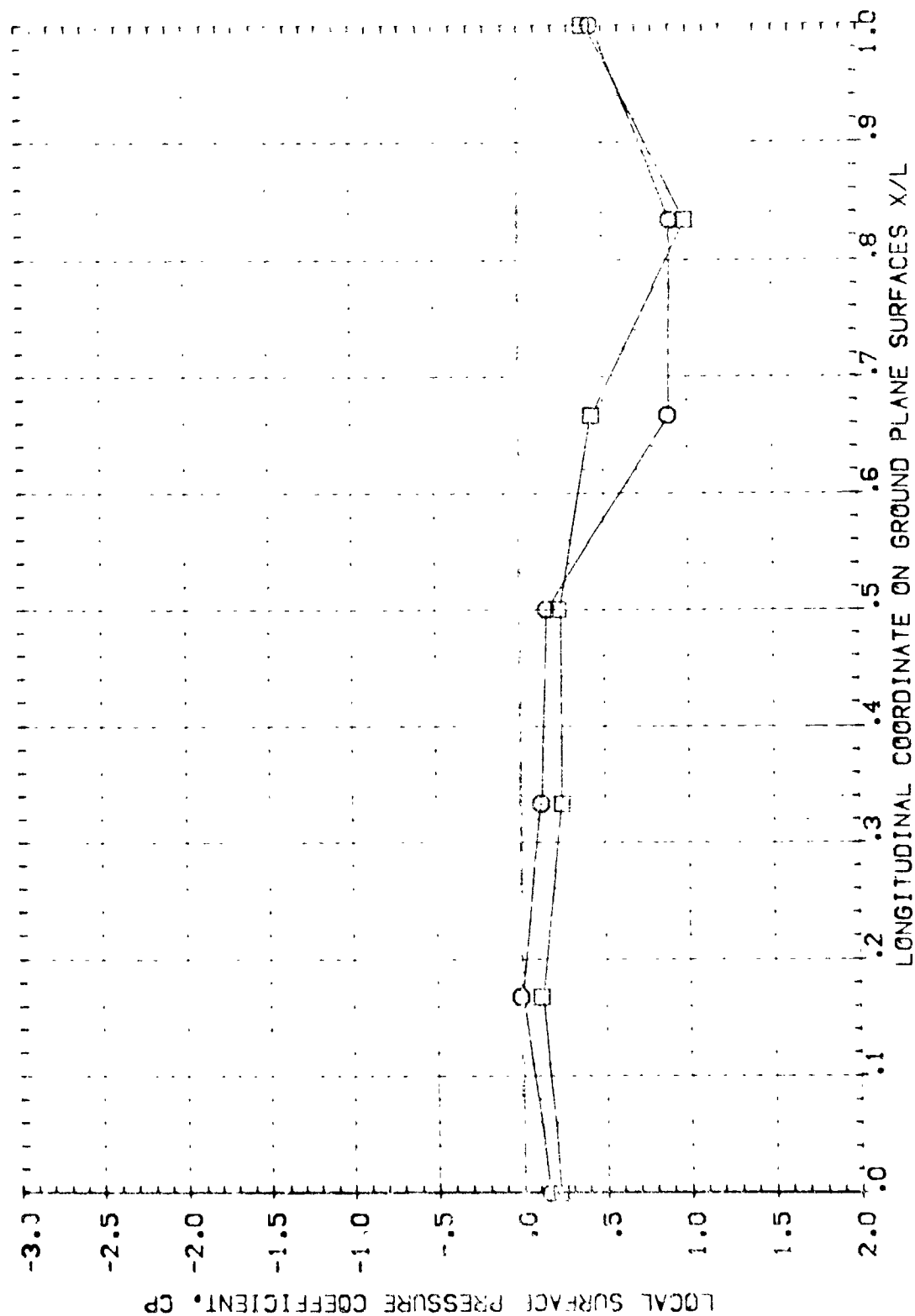


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG08)

| SYMBOL | ALPHA | | Z1/B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|--------|------|------|------|------|------|------|--------|-------------------|---------|
| | .000 | .000 | .000 | .000 | .165 | .000 | H/B | ELEVON | PTN/P | BOFLAP |
| ○ | 9.900 | | | | | | | | .000 | 1.500 |
| ◇ | 14.900 | | | | | | | | .125 | -18.000 |
| | | | | | | | | | .000 | |

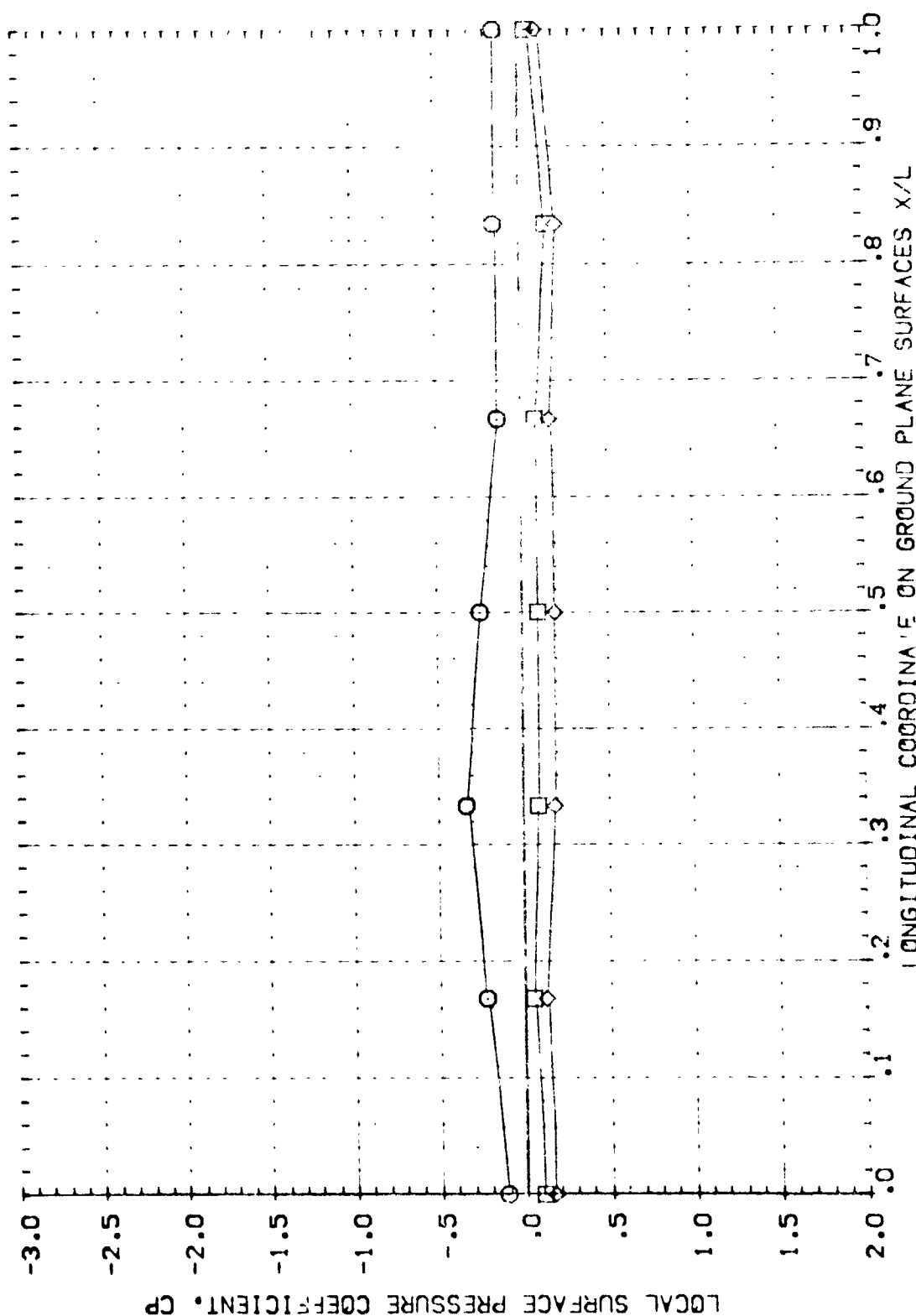


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE(RDVG16)

| | | | | | | |
|--------|--------|------|------|-------------------|--------|---------|
| SYMBOL | ALPHA | 2Y/B | MACH | PARAMETRIC VALUES | | |
| ○ | .000 | .000 | .165 | BETA | PTN/P | 1.500 |
| ○ | 9.900 | | | H/B | BDFLAP | -18.000 |
| ◇ | 15.000 | | | ELEVON | | |

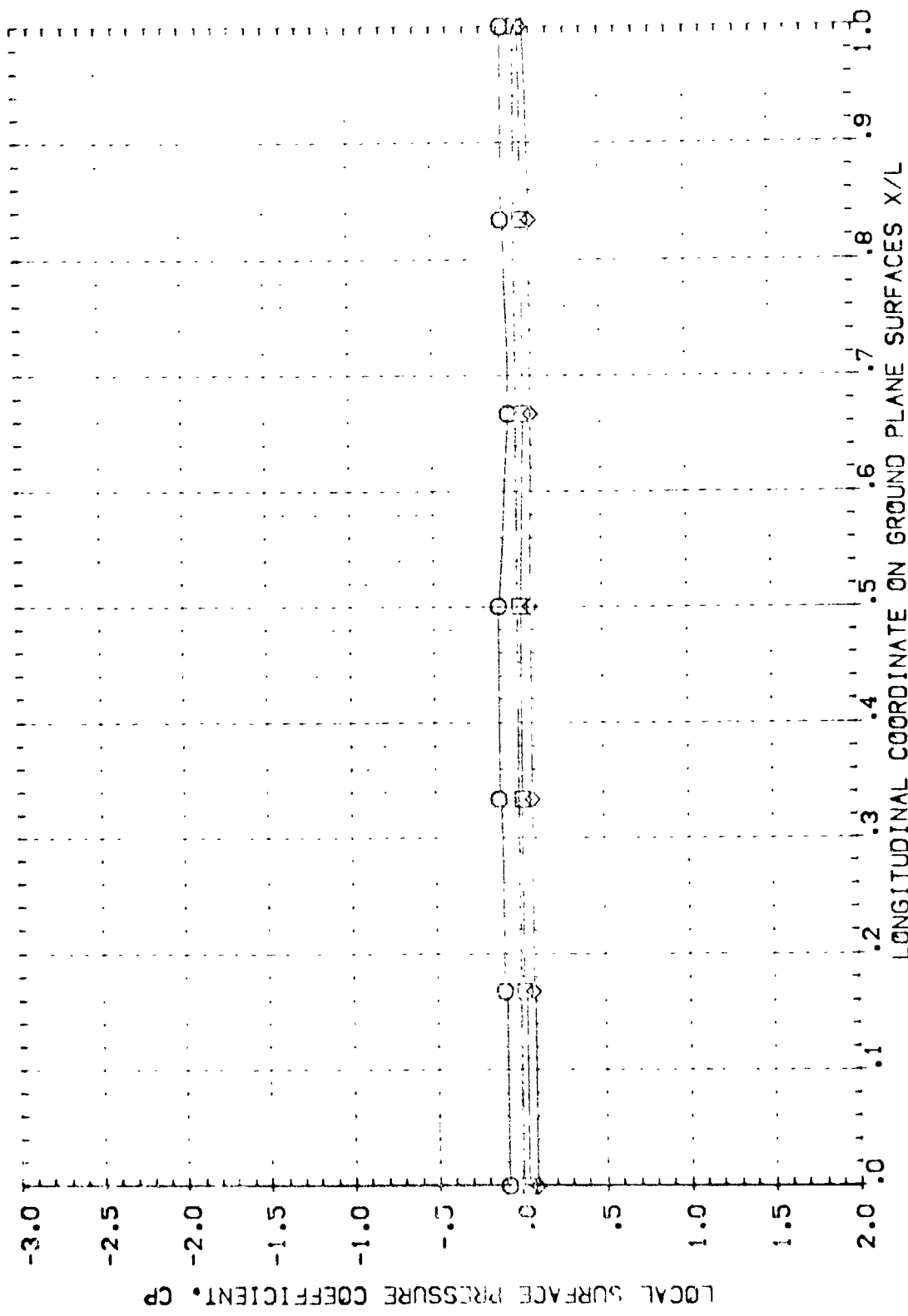


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG31)

| | | | | | | | |
|--------|-------|---------------|------|-------------------|-------|--------|--|
| SYMBOL | ALPHA | 2 γ /B | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | BOFLAP | |
| | | | | H/B | | | |
| | | | | ELEVON | | | |
| 10.000 | .000 | .000 | .000 | 1.500 | | | |
| 15.000 | .039 | | | -18.000 | | | |
| | | | | 15.000 | | | |

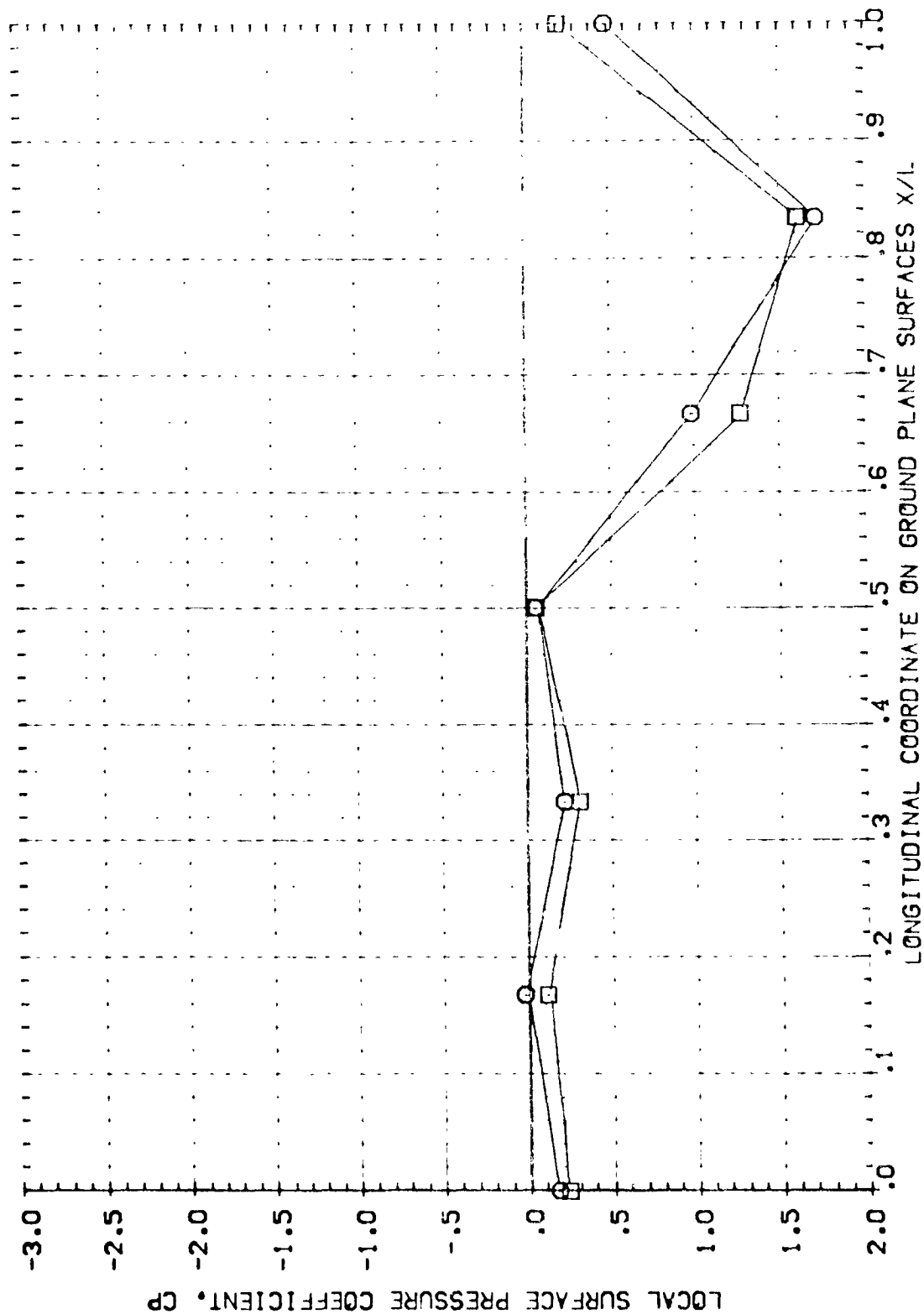


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

CA57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG28)

| SYMBOL | ALPHA | | ZETA | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|--------|------|------|------|--|------|--------|-------------------|--------|
| | 9.900 | 14.900 | .000 | .000 | .165 | | H/B | ELEVON | .000 | PTN/P |
| ○ | | | | | | | | | .125 | BOFLAP |
| ◇ | | | | | | | | | 15.000 | 1.500 |
| | | | | | | | | | | 16.000 |

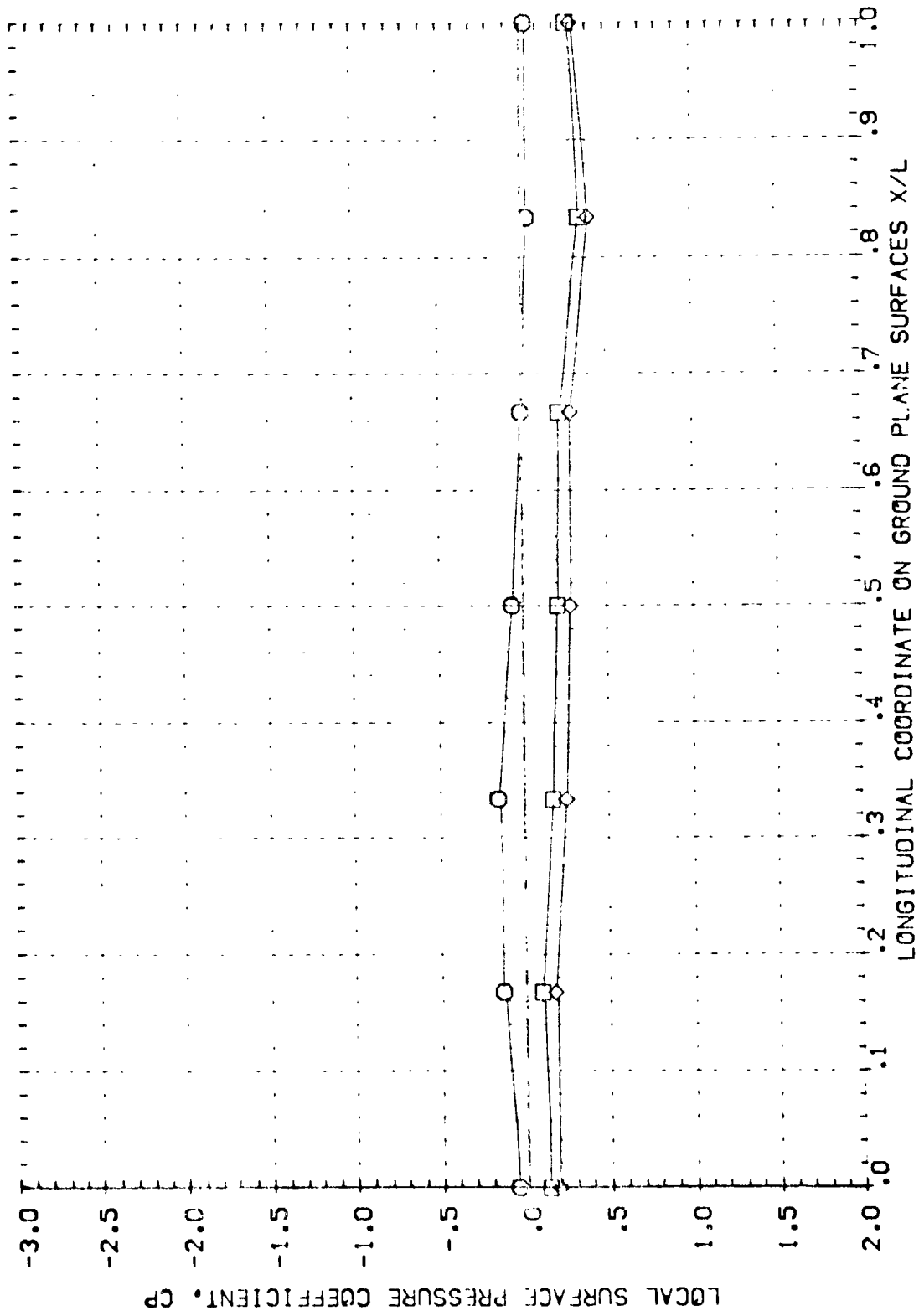


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

0A57-B B16C5F1 J40 W87E18 GROUND PLANE SRFACE (RDVG34)

| SYMBOL | ALPHA | | ZY/B | | MACH | | PARAMETRIC VALUES | | | |
|--------|--------|--|------|--|------|--|-------------------|--|--------|--|
| | .000 | | .000 | | .165 | | BETA | | PTN/P | |
| | 9.900 | | | | | | H/B | | BOFLAP | |
| | 14.900 | | | | | | ELEVON | | 15.000 | |

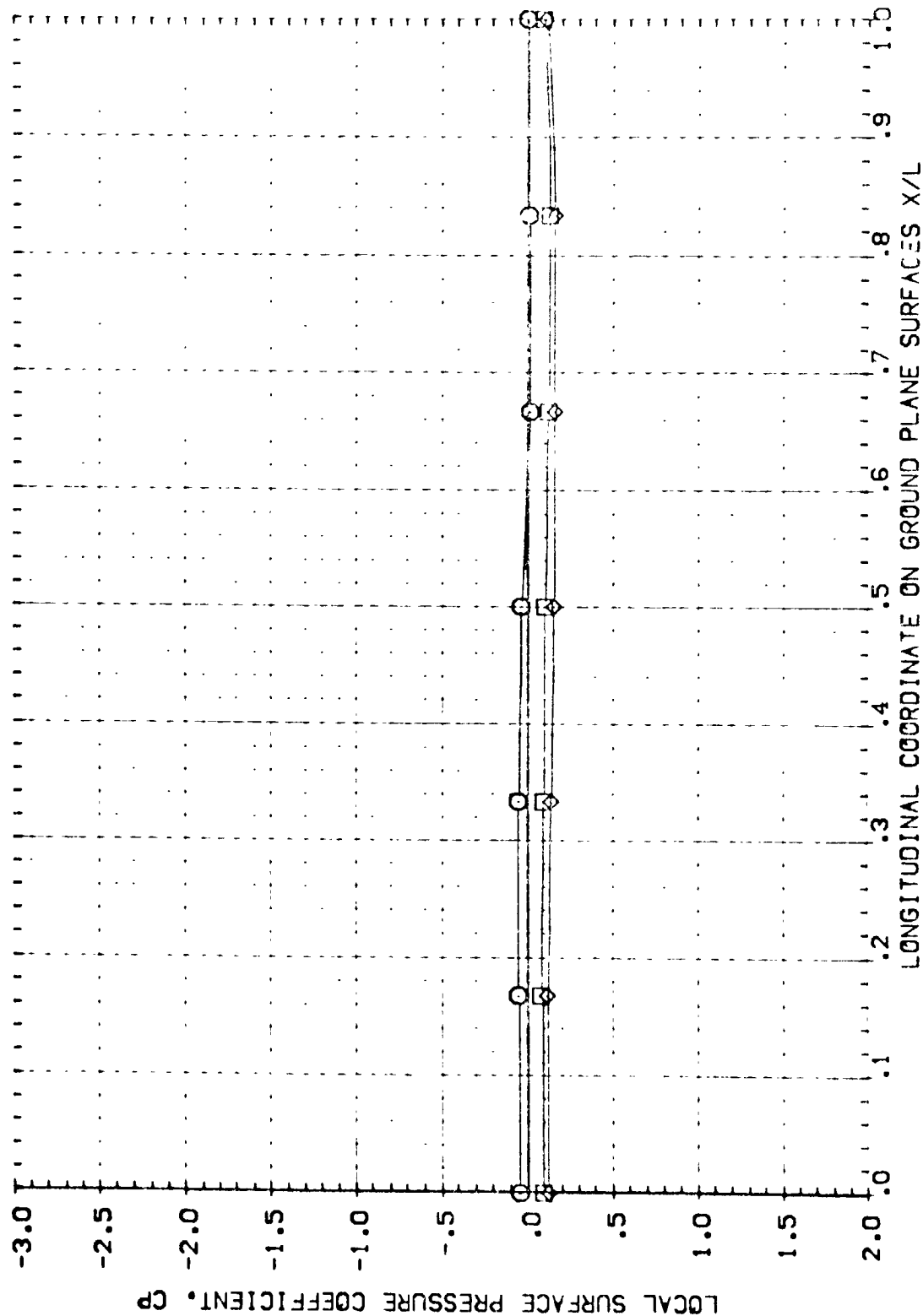


FIG 99 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J40 AT PTN/P = 1.5

GA57-B B16C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG56)

| | | | | | | |
|-------------|--------|------|------|-------------------|---------|---------|
| SYMBOL ○ | ALPHA | 27.8 | MACH | PARAMETRIC VALUES | | |
| | 10.000 | .000 | .165 | BETA | PTN/P | 1.000 |
| | | | | H/B | 8751 AP | -18.000 |
| | | | | ELEVON | .000 | |

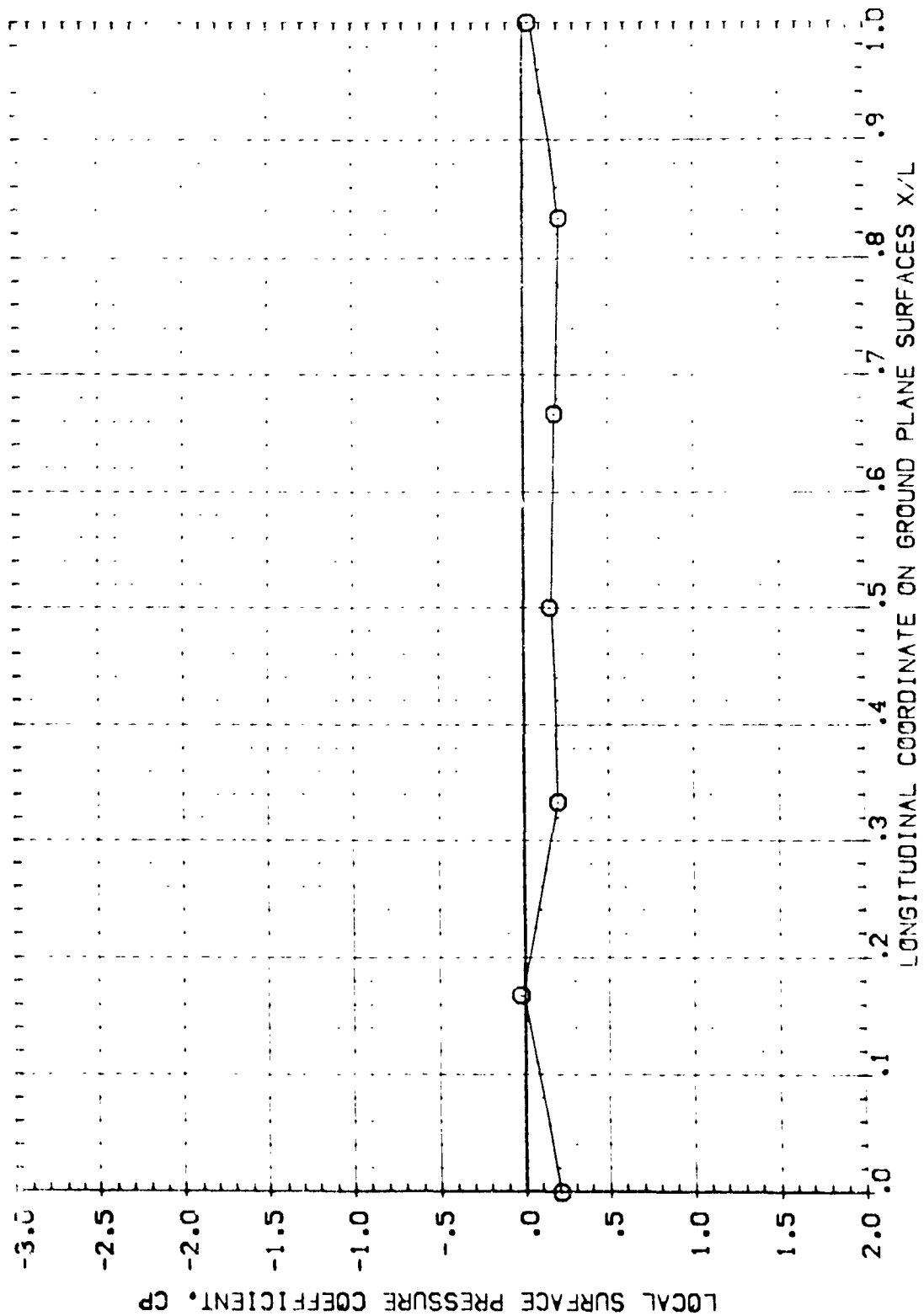


FIG 100 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.0

0A57-B B16C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG58)

| SYMBOL | ALPHA | | Z ₁ /B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|--------|-------------------|------|------|--|------|--------|-------------------|---------|
| | .000 | 10.000 | .000 | .000 | .165 | | H/B | ELEVON | .000 | PTN/P |
| ○ | | | | | | | | | .125 | BDFLAP |
| ◇ | | | | | | | | | .000 | 1.000 |
| | | | | | | | | | | -18.000 |

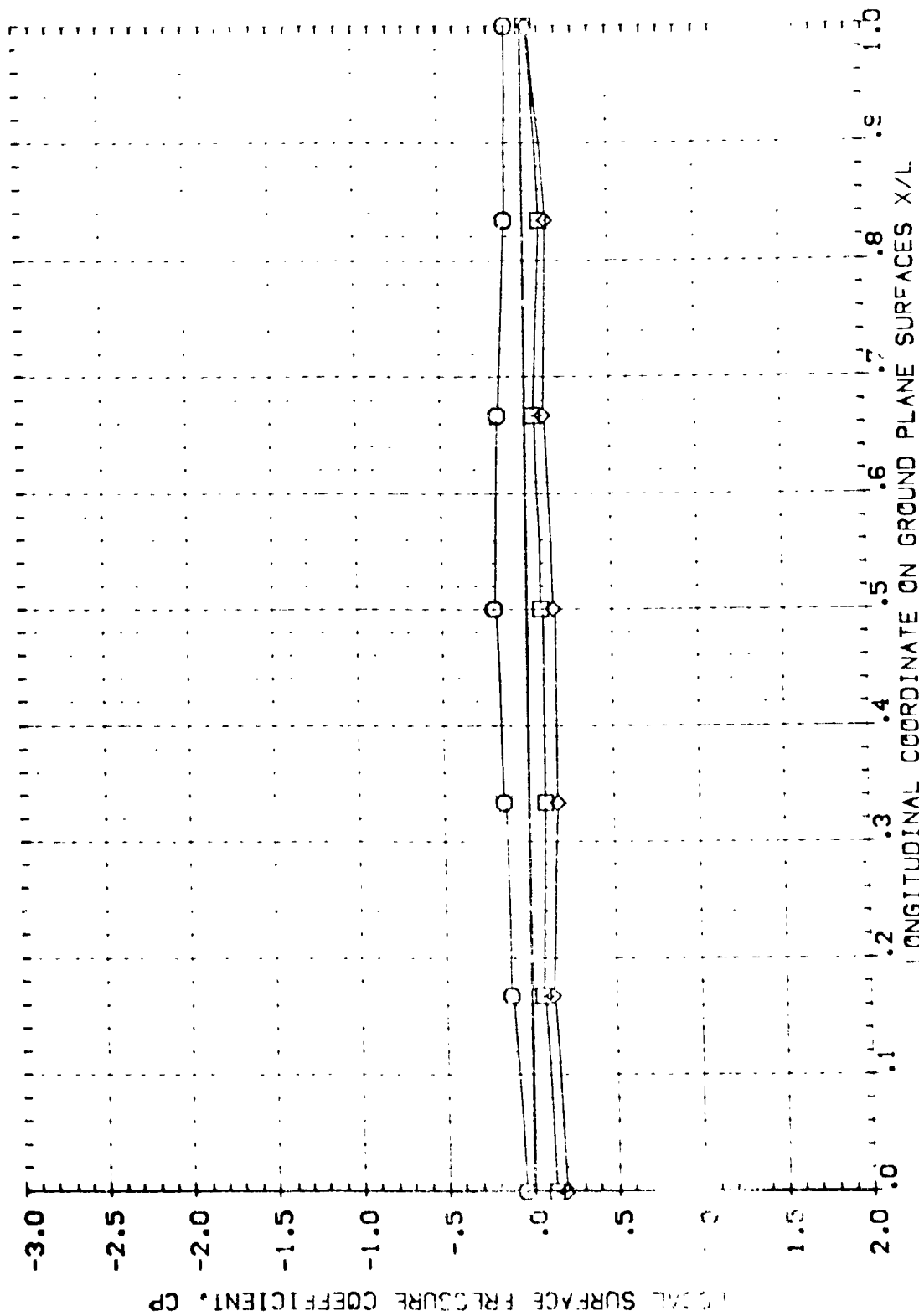


FIG 100 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.0

0A57-B 816C5F1 J41 W87E18 GROUND PLANE SRFACE(RDVG53)

| SYMBOL | ALPHA | | Z/Y/B | | MACH | | PARAMETRIC VALUES | | |
|--------|--------|------|-------|------|------|------|-------------------|--------|---------|
| | .000 | .000 | .000 | .000 | .165 | .000 | BETA | PTN/P | 1.000 |
| □ | 9.900 | | | | | | H/B | BOFLAP | -18.000 |
| ◇ | 14.500 | | | | | | ELEVON | | .000 |

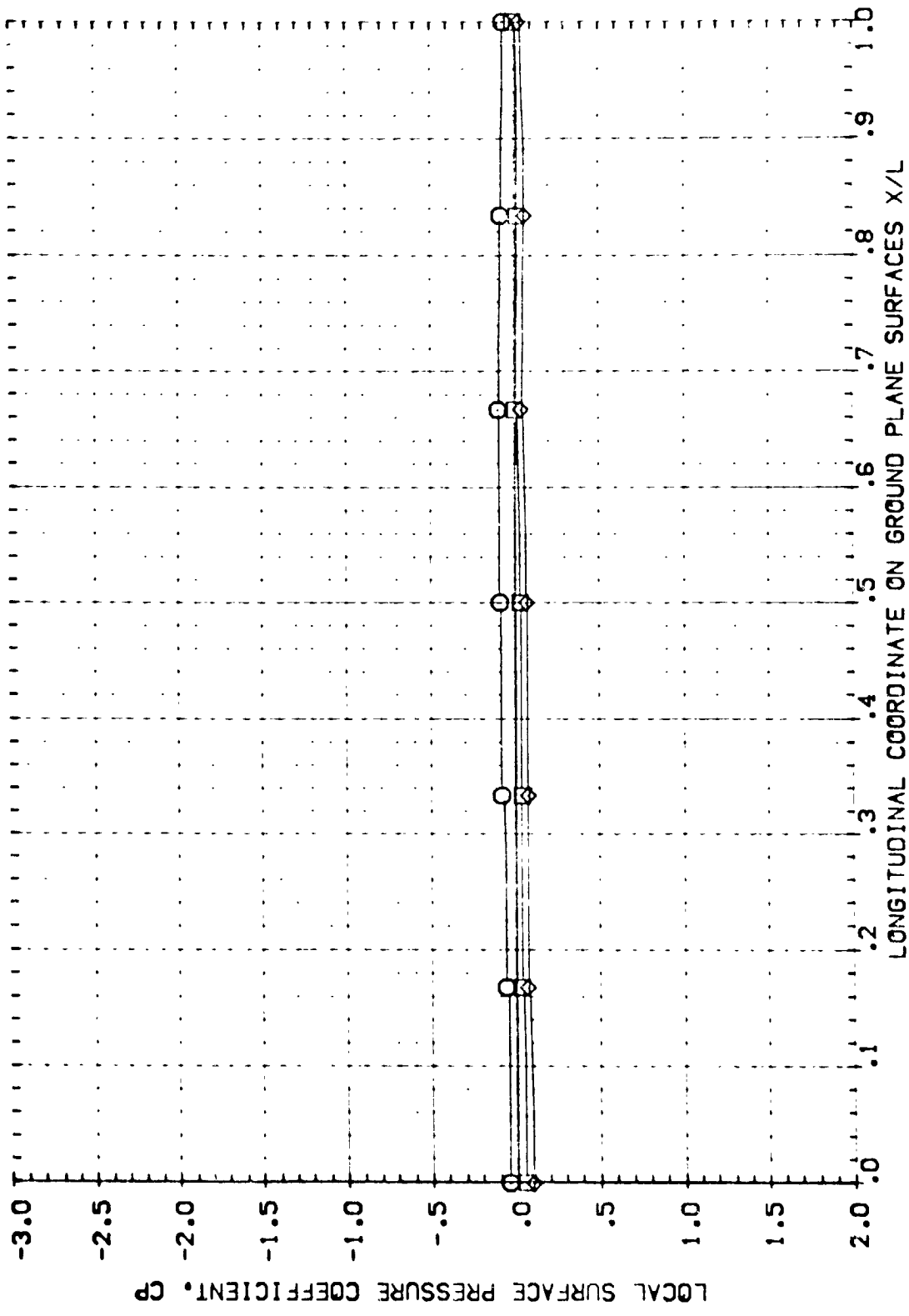


FIG 100 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.0

JAS7-B B16C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG49)

| | | | | | | | |
|--------|-------|------|------|-------------------|--------|---------|--|
| SYMBOL | ALPHA | 2Y/B | MACH | PARAMETRIC VALUES | | | |
| | | | | BETA | PTN/P | 1.000 | |
| | | | | H/B | BTFLAP | -18.000 | |
| | 4.900 | .000 | .165 | ELEVON | 15.000 | | |

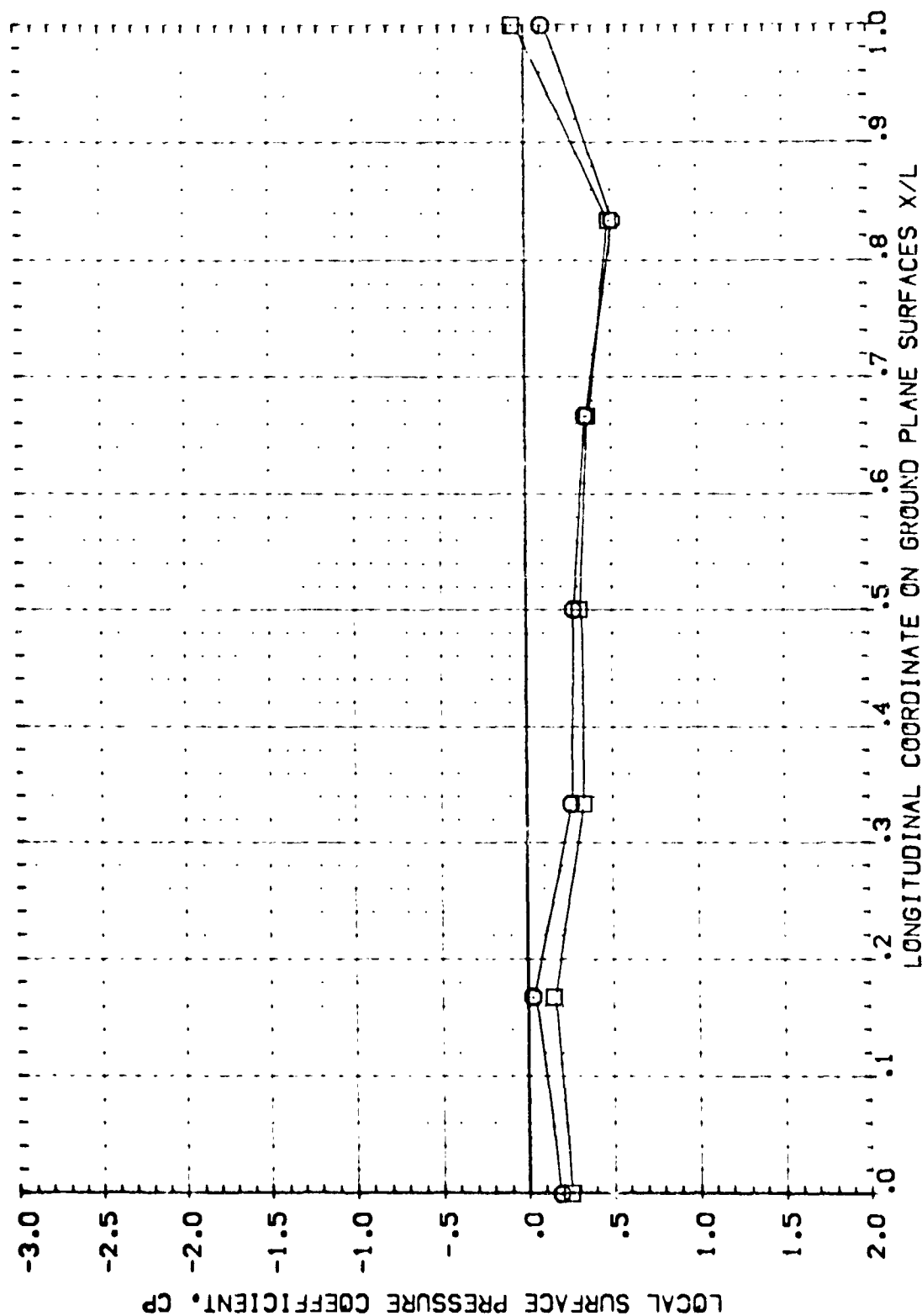


FIG 100 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.0

0A57-B 016CSF1 J41 W87E18 GROUND PLANE SRFACE (RDVG47)

| S1180L | ALPHA | | 2Y/B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|--------|------|------|------|------|------|------|--------|-------------------|---------|
| | .000 | .000 | .000 | .000 | .185 | .185 | H/B | ELEVON | .000 | PTN/P |
| ○ | 9.900 | | | | | | | | .125 | BDFLAP |
| ◇ | 14.900 | | | | | | | | 15.000 | -18.000 |

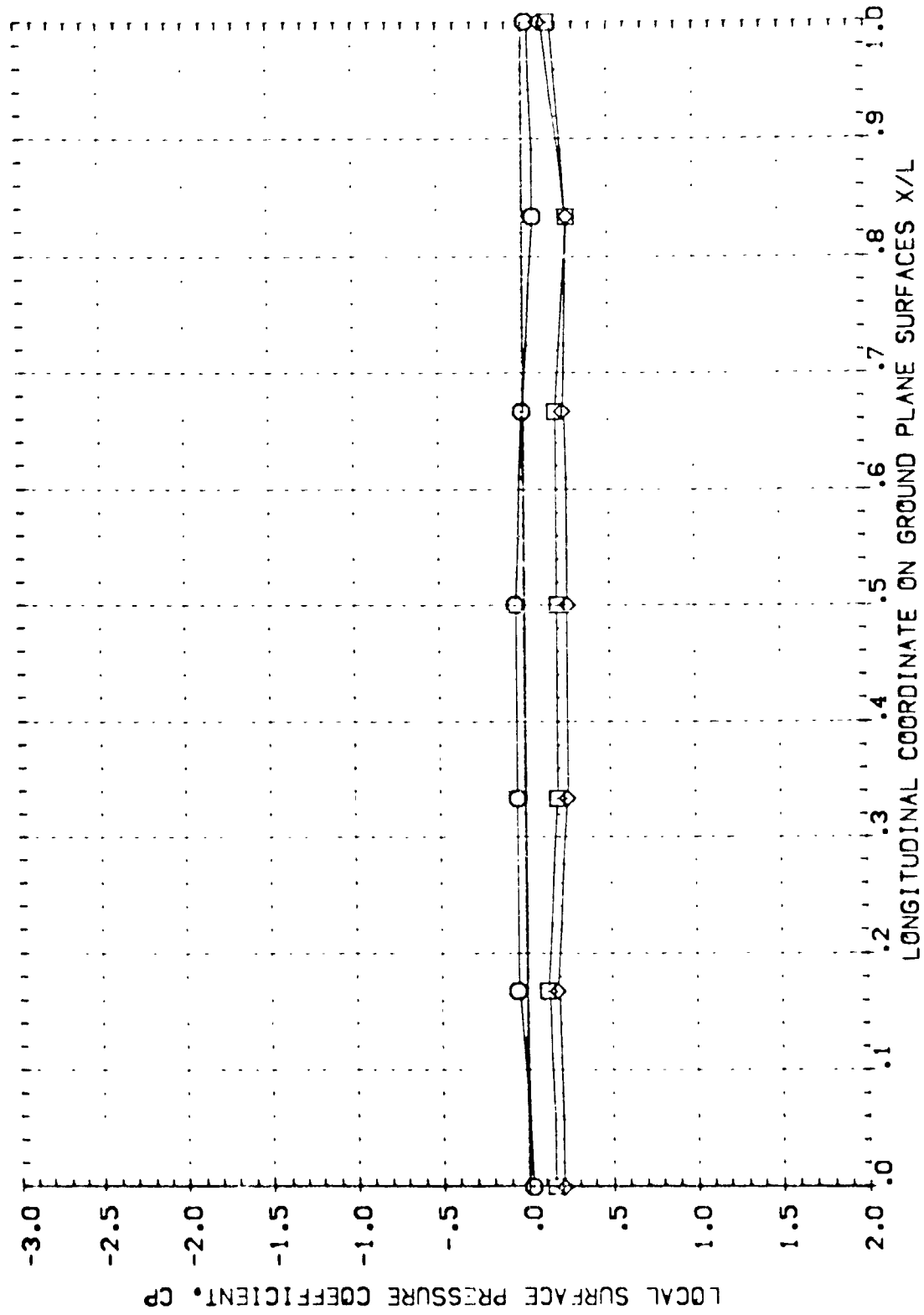


FIG 100 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.0

0A57-B B16C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG51)

| | | | | | | |
|--------|--------|------|------|-------------------|--------|---------|
| SYMBOL | ALPHA | 21/8 | MACH | PARAMETRIC VALUES | | |
| ○ | .000 | .000 | .165 | BETA | .000 | PTN/P |
| ◇ | 9.500 | | | H/B | .286 | BOFLAP |
| | 14.500 | | | ELEVON | 15.000 | |
| | | | | | | 1.000 |
| | | | | | | -18.000 |

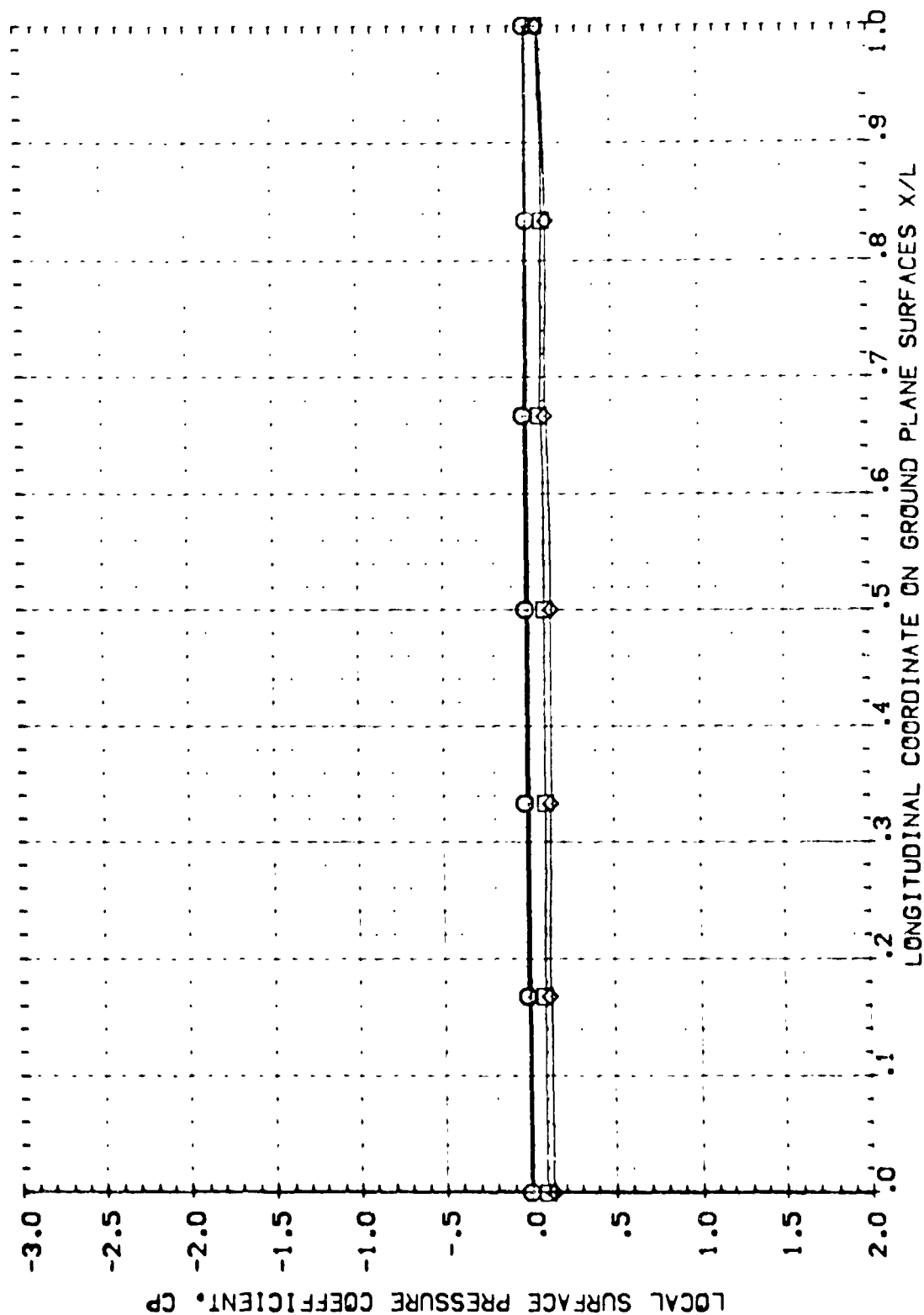


FIG 100 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.0

0A57-B 816C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG54)

| SYMBOL | ALPHA | | ZETA/B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|--------|--------|------|------|--|------|--------|-------------------|--------------------|
| | 9.900 | 15.000 | .000 | .165 | | | H/3 | ELEVON | .000 | P _{TN} /P |
| ○ | | | | | | | | | .039 | BOFLAP |
| □ | | | | | | | | | .000 | -18.000 |

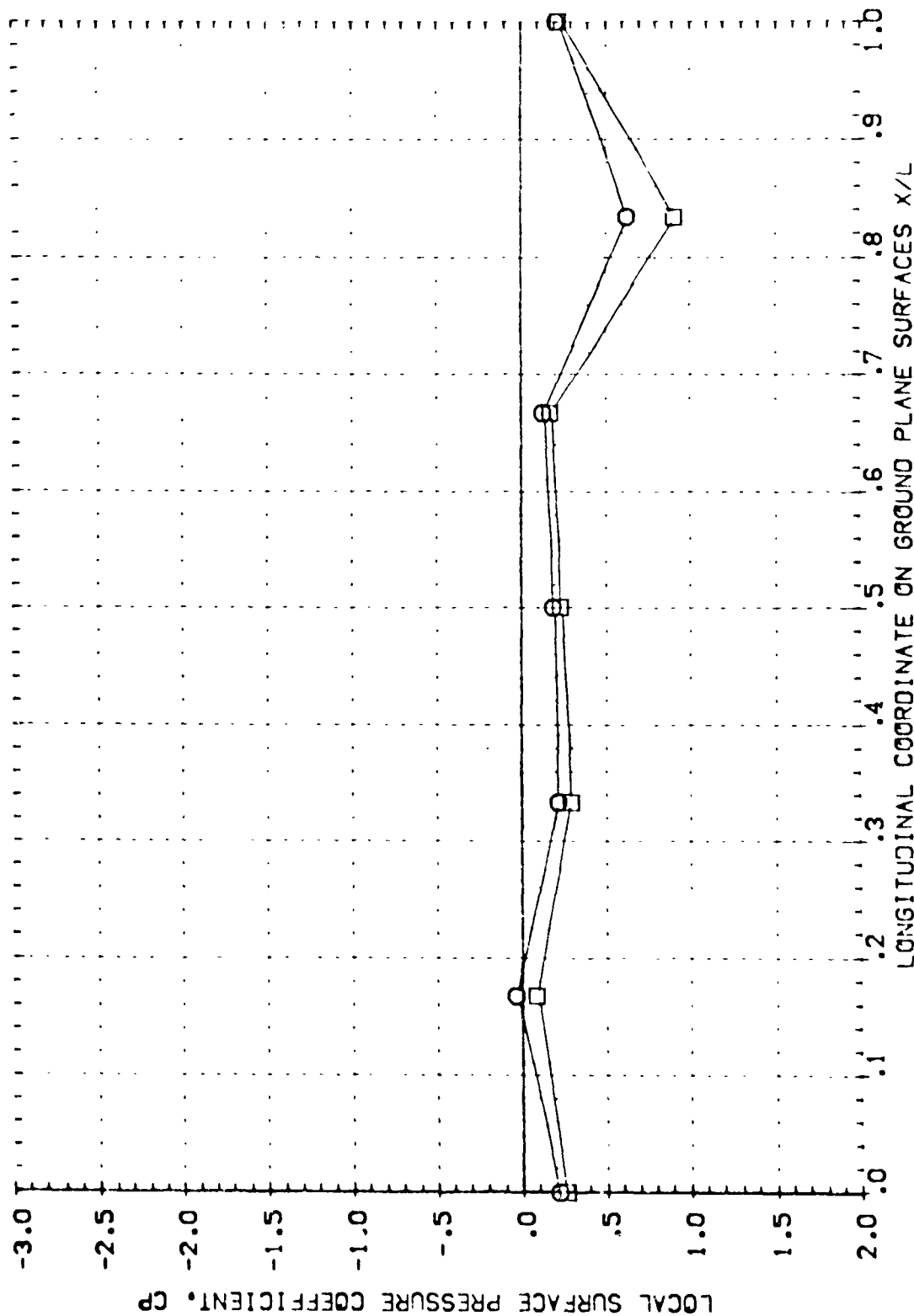


FIG 101 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT $P_{TN}/P = 1.3$

0A57-B B16C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG57)

| | | | | | | |
|--------|--------|------|------|--------|-------------------|---------|
| SYMBOL | ALPHA | 2Y/B | MACH | BETA | PARAMETRIC VALUES | |
| ○ | .000 | .000 | .165 | H/B | PTN/P | 1.300 |
| □ | 9.900 | | | ELEVON | BDFLAP | -18.000 |
| ◇ | 15.000 | | | | | |

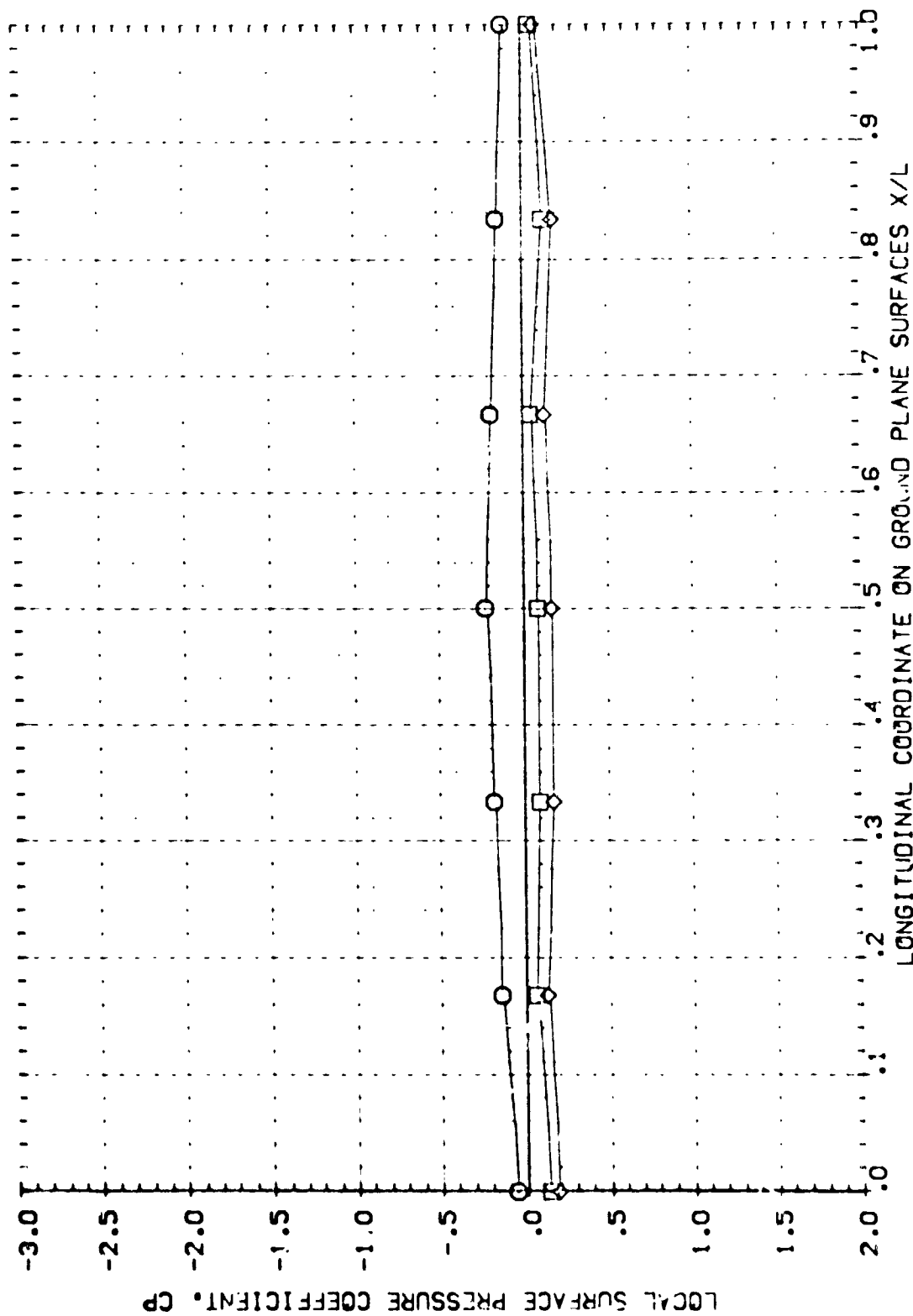


FIG 101 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.3

0A57-B B16C5F1 J-1 W87E18 GROUND PLANE SRFACE (RDVG52)

| SYMBOL | ALPHA | | ZY/B | MACH | PARAMETRIC VALUES | | | |
|--------|-------|-------|------|------|-------------------|--------|---------|--|
| | .000 | 9.500 | .000 | .165 | BETA | PTN/P | 1.300 | |
| ○ | | | | | H/B | BDFLAP | -18.000 | |
| ◇ | | | | | ELEVON | .000 | | |

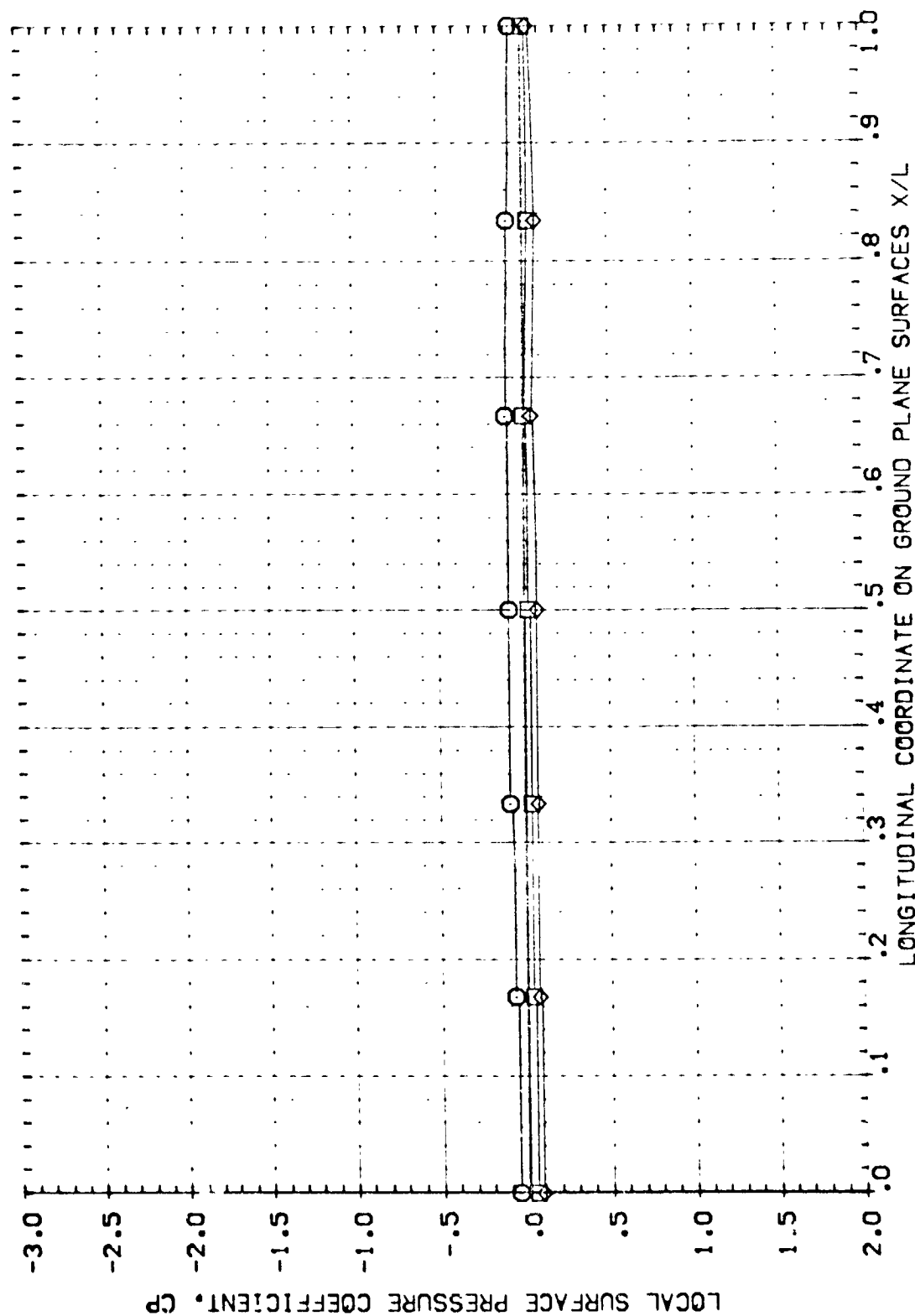


FIG 101 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.3

0A57-B B16C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG48)

| | | | | | | | |
|--------|-------|------|------|--------|-------|---------|--------|
| SYMBOL | ALPHA | 2Y/B | MACH | BETA | PTN/P | BOF LAP | ELEVON |
| [] | .000 | .000 | .165 | H/B | .000 | 15.000 | 1.000 |
| [] | 4.900 | | | ELEVON | .038 | -18.000 | |

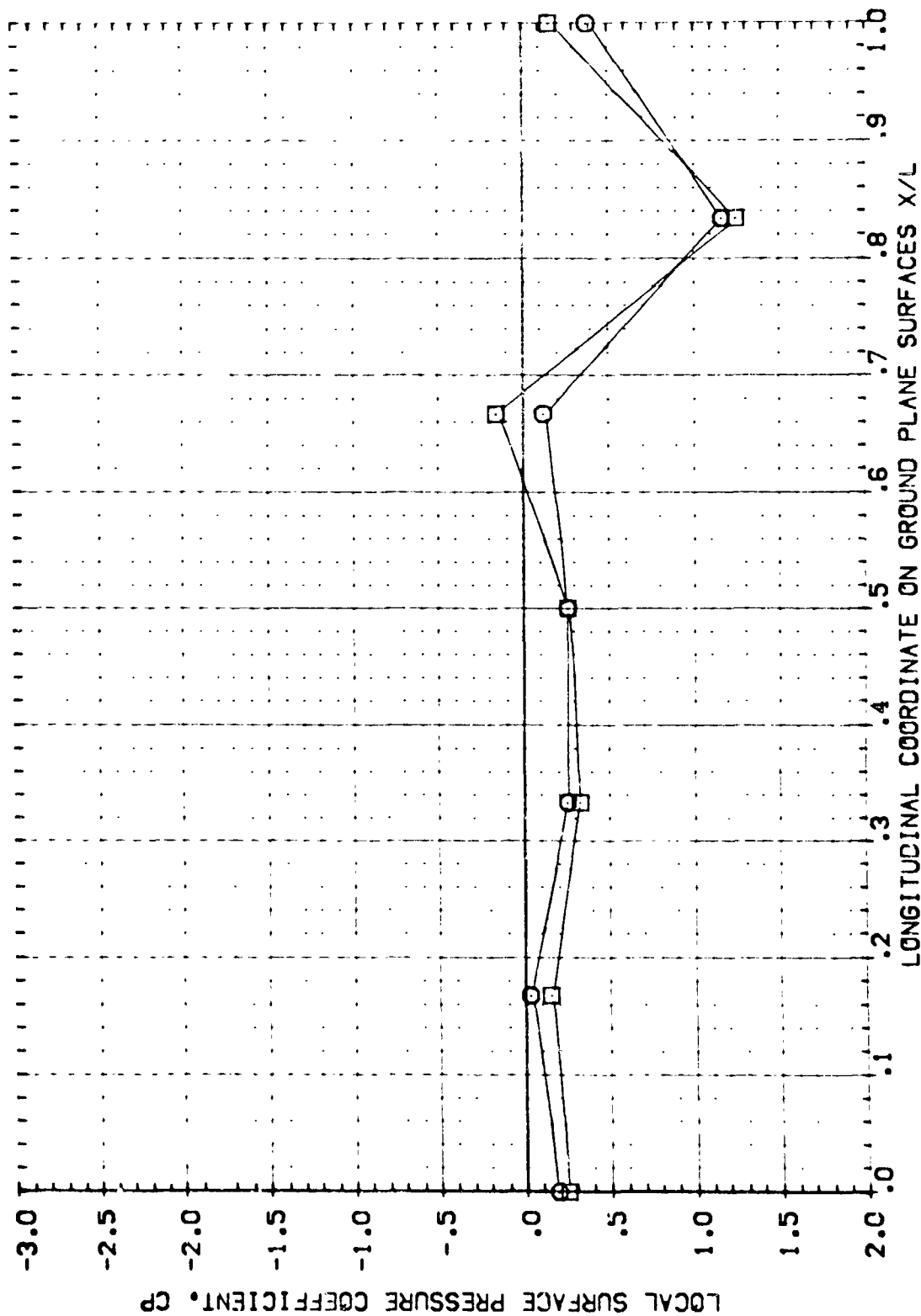


FIG 101 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.3

0A57-B B16CSF1 J41 W87E18 GROUND PLANE SRFACE (RDVG46)

| SYMBOL | PARAMETRIC VALUES | | |
|-------------------|-------------------|---------|------|
| | ALPHA | ZY/B | MACH |
| ◇ | .000 | .000 | .165 |
| ○ | 9.900 | | |
| | 14.900 | | |
| PARAMETRIC VALUES | | | |
| BETA | PTN/P | 1.300 | |
| H/B | BOFLAP | -18.000 | |
| ELEVON | | 15.000 | |

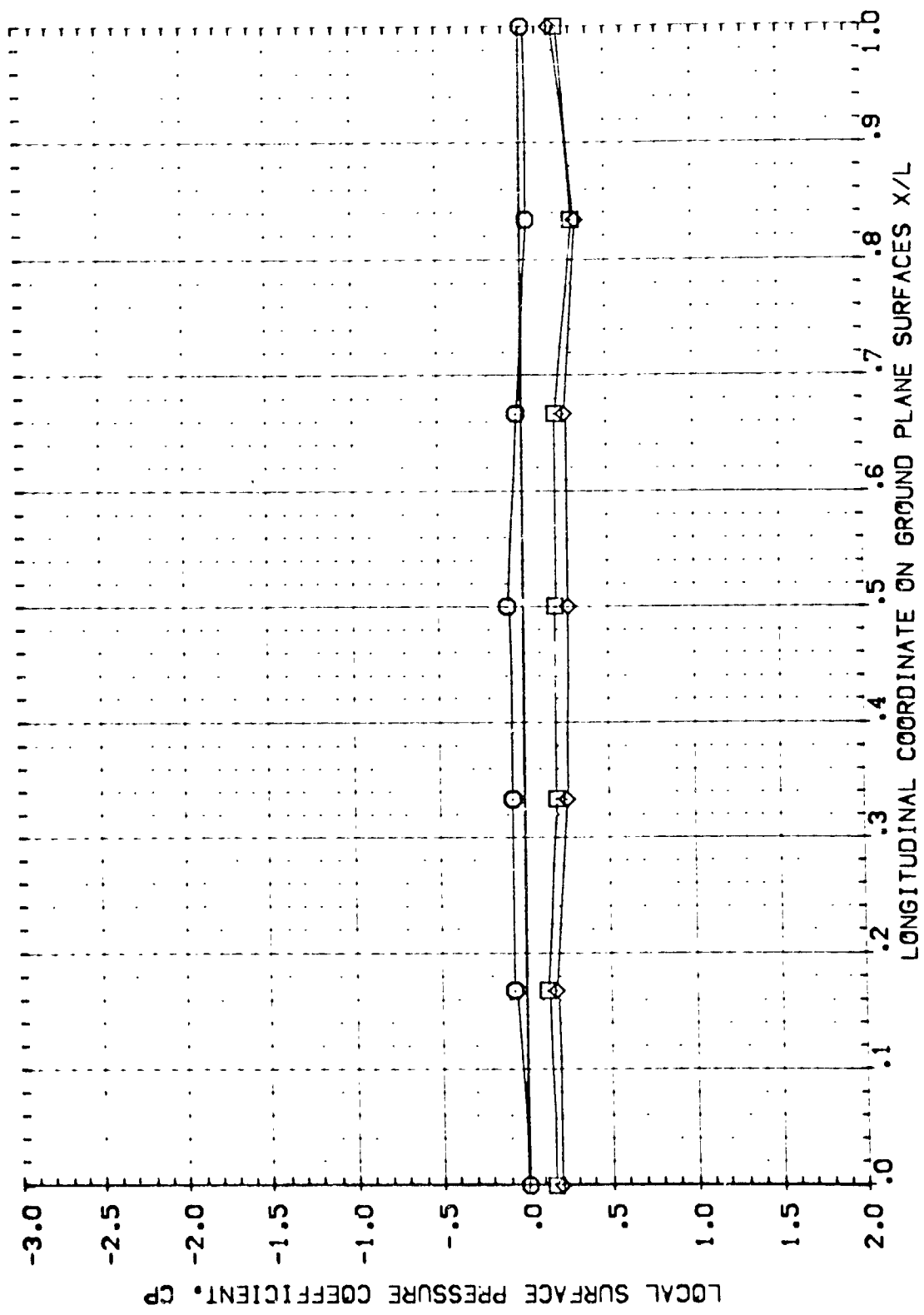


FIG 101 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.3

0A57-B B16C5F1 J41 W87E18 GROUND PLANE SRFACE (RDVG50)

| | | | | | | | |
|--------|--------|------|------|------|-------|--------|--------|
| SYMBOL | ALPHA | ZY/B | MACH | BETA | PTN/P | BOFLAP | ELEVON |
| ○ | .000 | .000 | .165 | .000 | 1.300 | .286 | 15.000 |
| ◇ | 9.500 | | | | | | |
| | 14.900 | | | | | | |

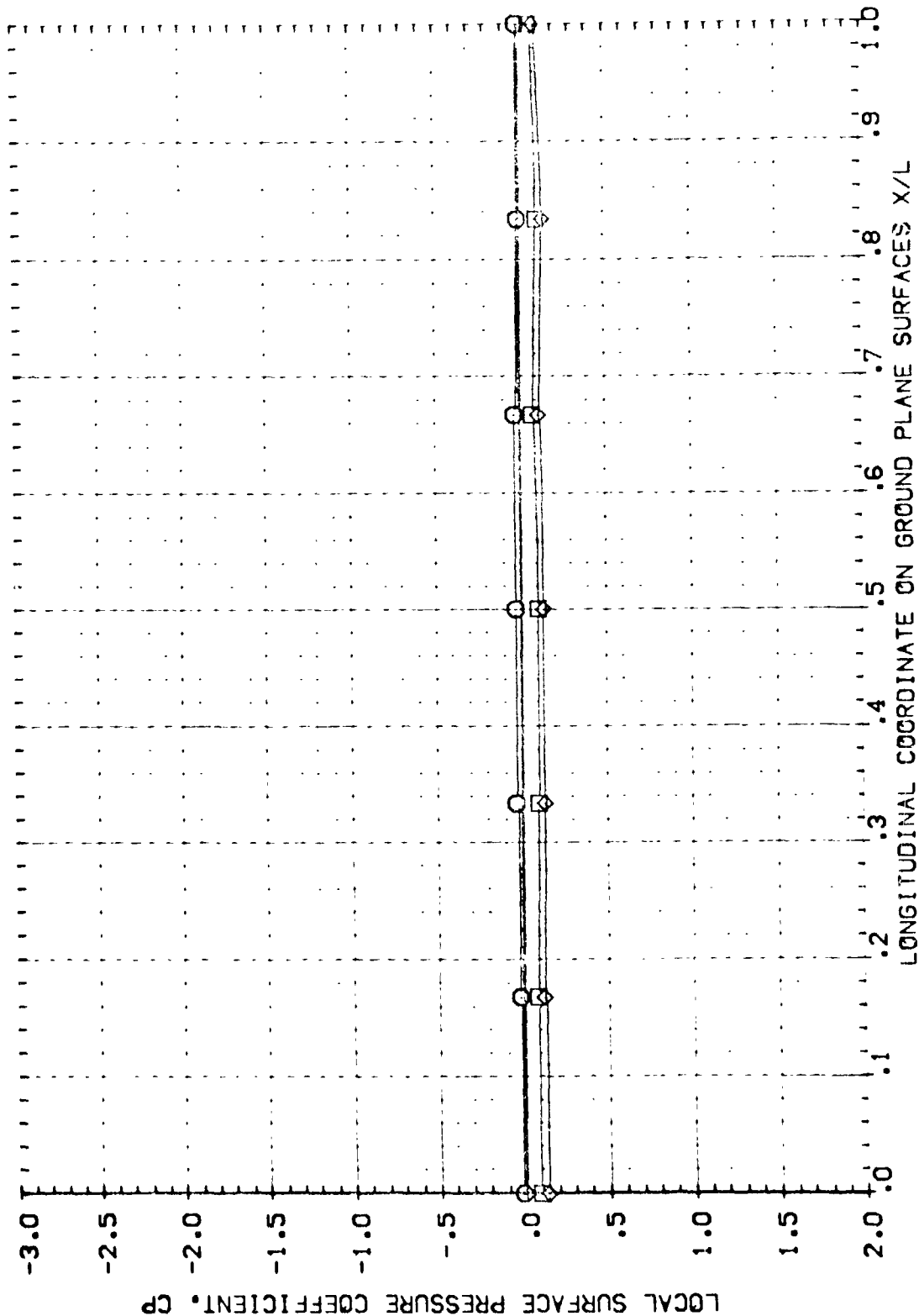


FIG 101 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J41 AT PTN/P = 1.3

0A57-B B16C5F1 J42 W87E18 GROUND PLANE SRFACE (RDVG64)

| | | | | | | |
|--------|--------|------|------|-------------------|--------|---------|
| SYMBOL | ALPHA | 2Y/B | MACH | PARAMETRIC VALUES | | |
| □ | 9.900 | .000 | .165 | BETA | PTN/P | 1.000 |
| □ | 15.000 | | | H/B | BOFLAP | -18.000 |
| | | | | ELEVON | | .000 |

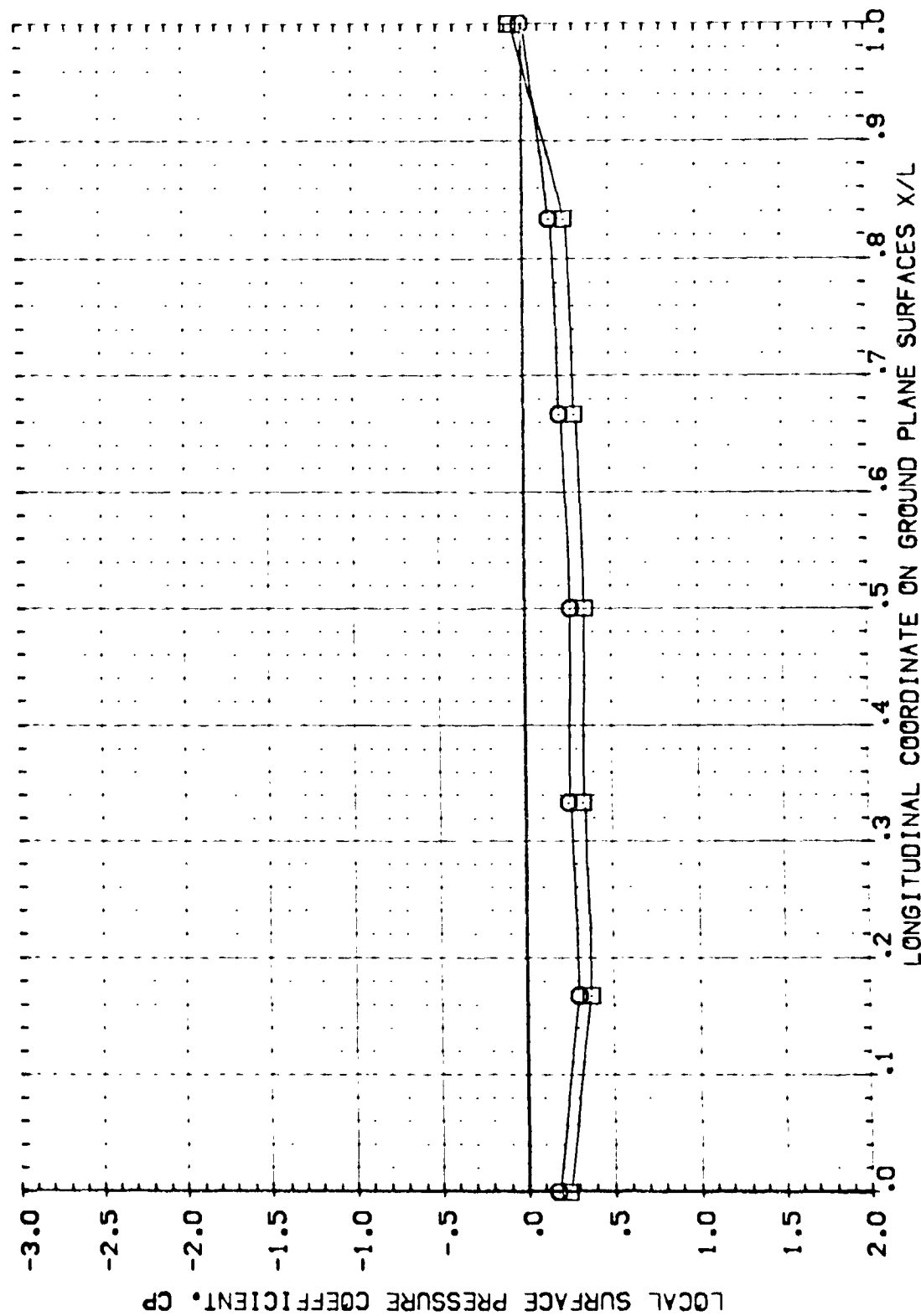


FIG 102 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.0

0A57-B B16C5F1 J42 W87E18 GROUND PLANE SRFACE (RDVG67)

| | | | | | | |
|--------|--------|---------------|------|-------------------|--------|---------|
| SYMBOL | ALPHA | 2 γ /B | MACH | PARAMETRIC VALUES | | |
| ○ | .000 | .000 | .165 | BETA | PTN/P | 1.000 |
| ◇ | 9.900 | | | H/B | BOFLAP | -18.000 |
| | 14.900 | | | ELEVON | | .000 |

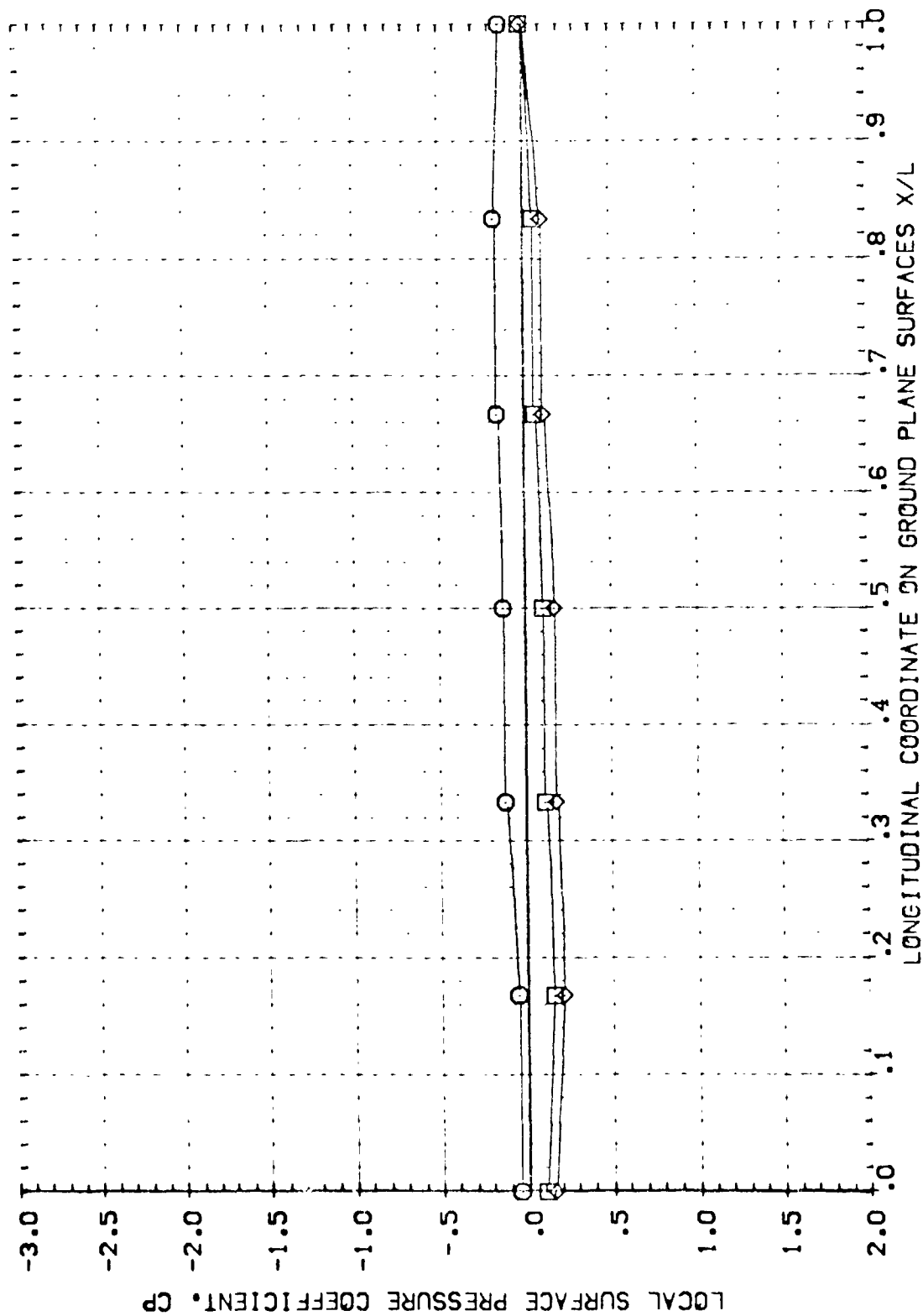


FIG 102 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.0

0A57-B B16C5F1 J42 W87E18 GROUND PLANE SRFACE (RDVG70)

| SYMBOL | ALPHA | | ZY/B | | MACH | | PARAMETRIC VALUES | | |
|--------|--------|-------|------|--|------|--|-------------------|--------|---------|
| | .000 | 9.900 | .000 | | .165 | | BETA | PTN/P | 1.000 |
| ○ | | | | | | | H/B | BOFLAP | -18.000 |
| ◇ | 14.900 | | | | | | ELEVON | .000 | |

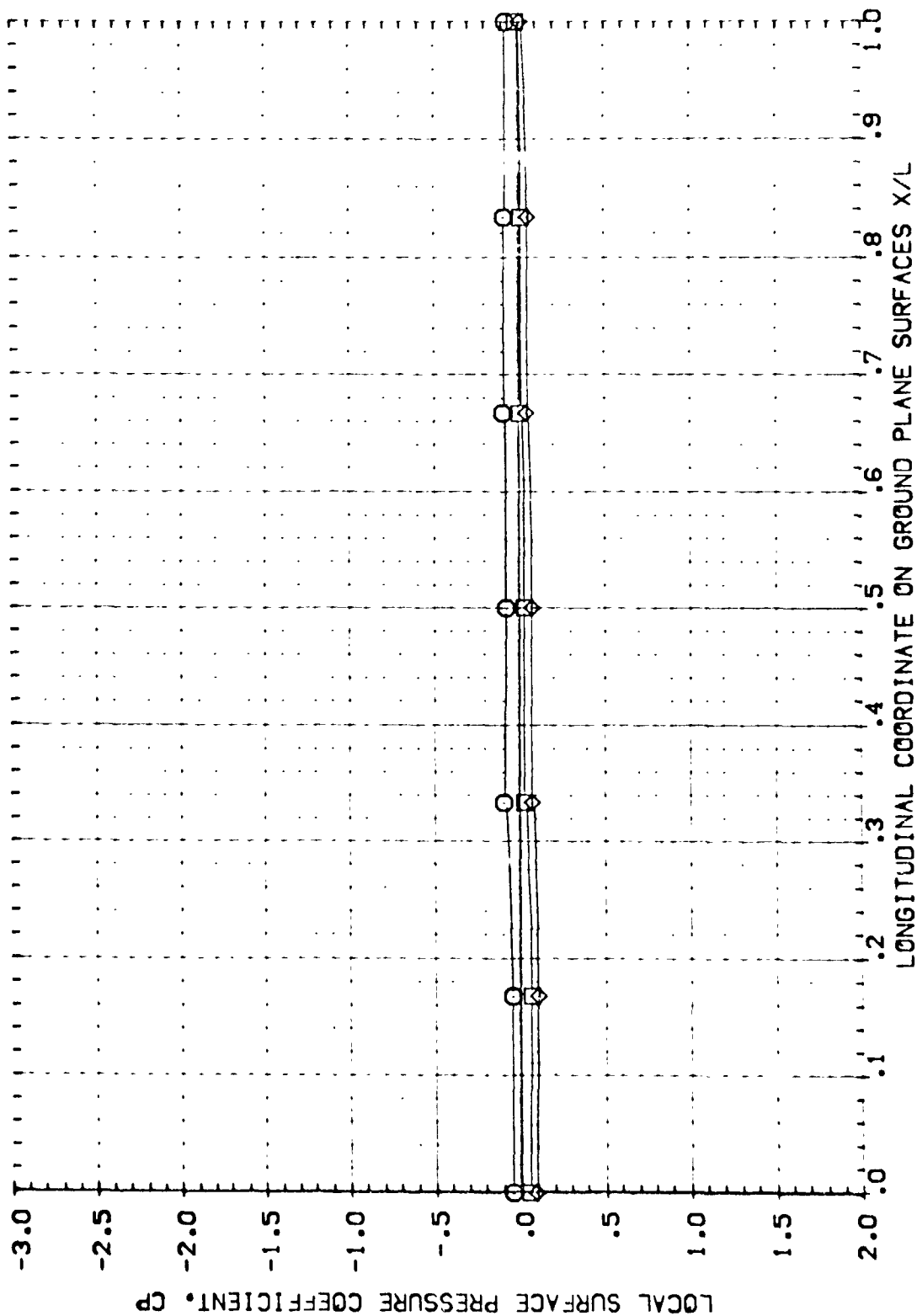


FIG 102 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.0

0A57-B B16C5F1 J42 W87E18 GROUND PLANE SRFACE (RDVG63)

| | | | | | | |
|--------|--------|------|------|--------|-------------------|---------|
| SYMBOL | ALPHA | ZY/B | MACH | BETA | PARAMETRIC VALUES | |
| ○ | 9.900 | .000 | .165 | H/B | PTN/P | 1.300 |
| □ | 14.900 | | | ELEVON | BOFLAP | -18.000 |
| | | | | | | .000 |

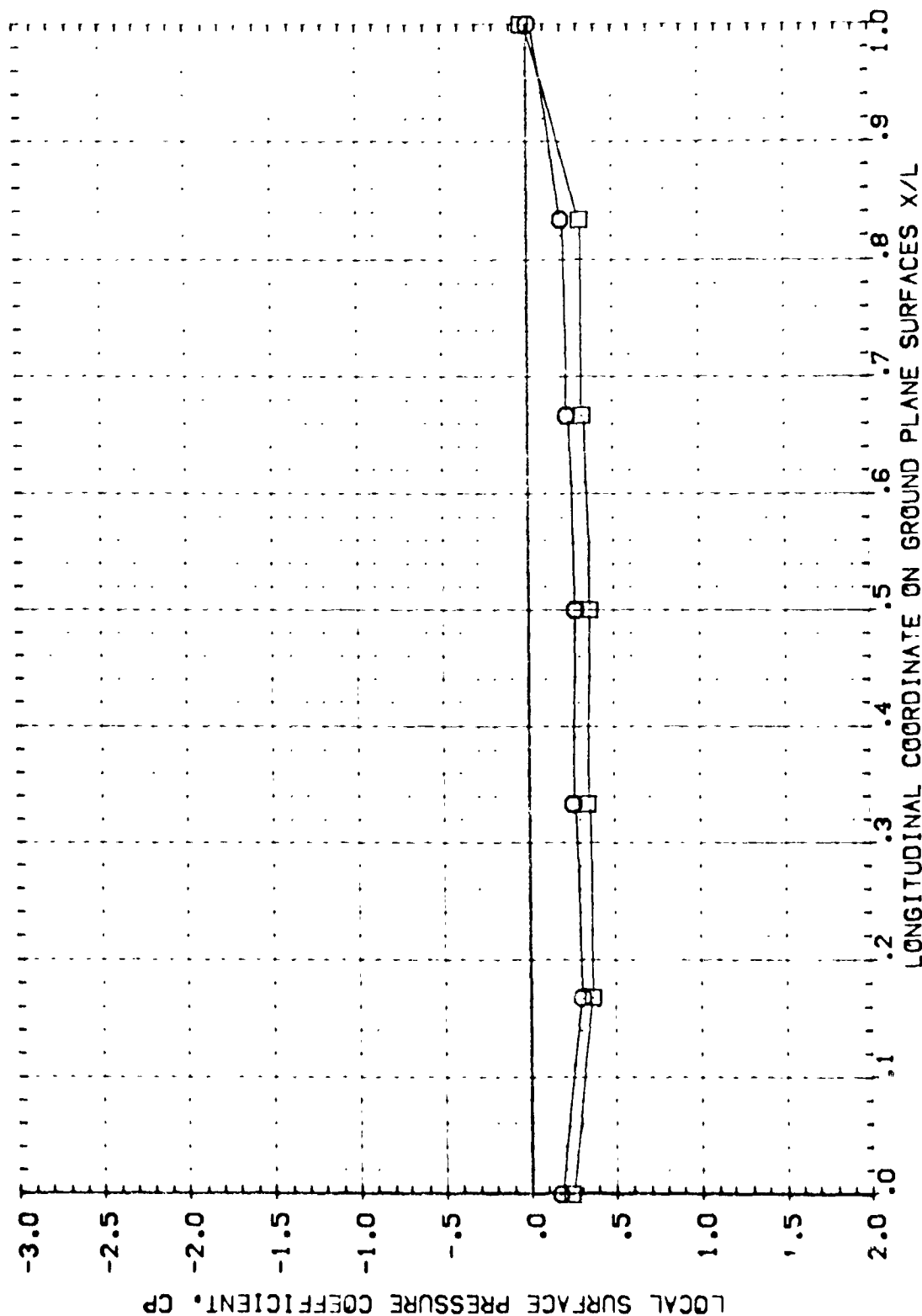


FIG 103 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.3

0A57-B B16CSF1 J42 W87E18 GROUND PLANE SRFACE (RDVG66)

| SYMBOL | ALPHA | | ZY/B | | MACH | | BETA | | PARAMETRIC VALUES | |
|--------|-------|-------|------|------|------|------|------|--------|-------------------|---------|
| | 0.000 | 9.900 | .000 | .000 | .165 | .165 | H/B | ELEVON | .000 | PTN/P |
| ○ | | | | | | | | | .125 | BOFLAP |
| ◇ | | | | | | | | | .000 | -10.000 |

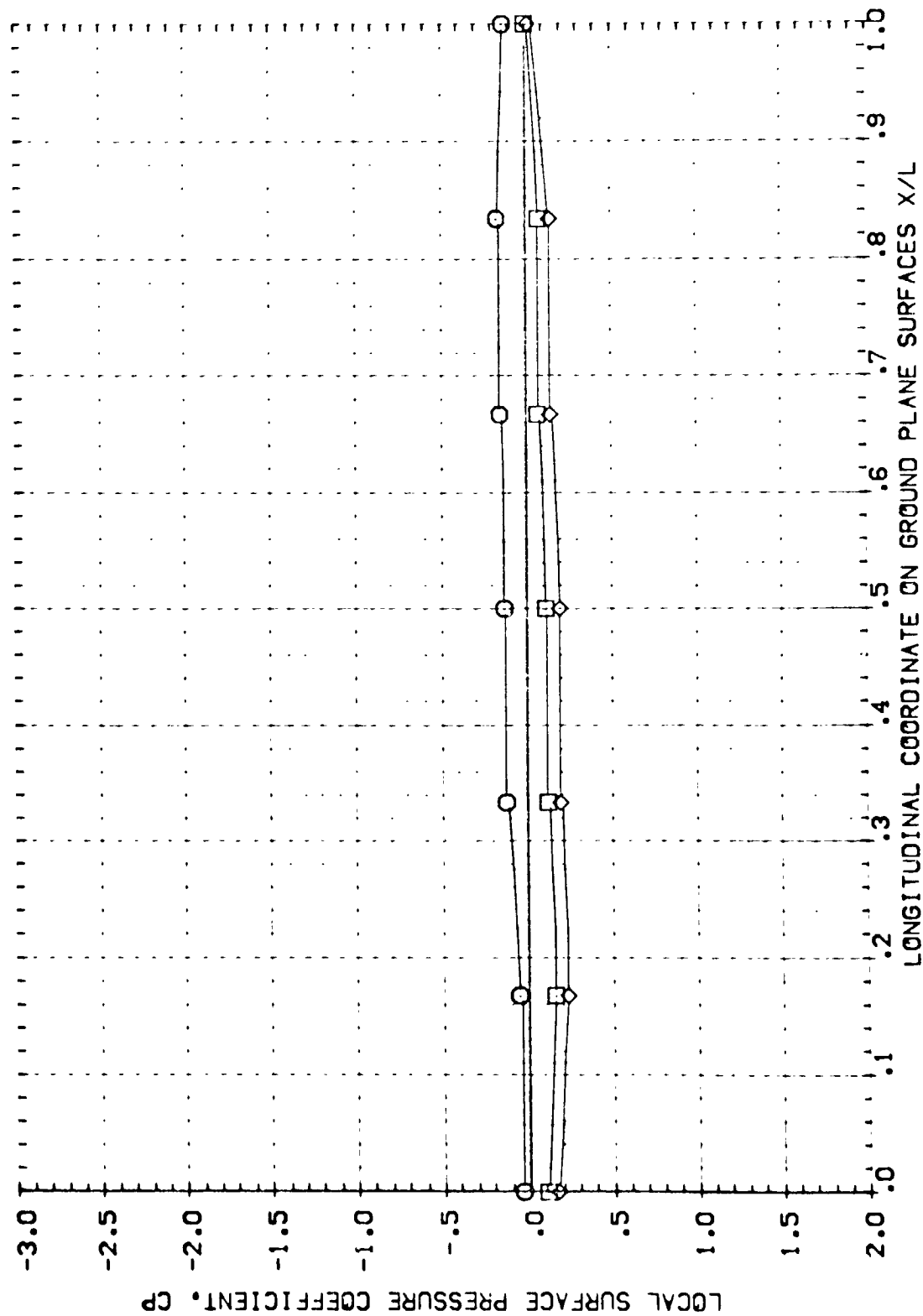


FIG 103 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.3

0A57-B B16C5F1 J42 W87E18 GROUND PLANE SRFACE(RDVG69)

| SYMBOL | ALPHA | | ZY/B | | MACH | | PARAMETRIC VALUES | | |
|--------|-------|--------|------|------|------|--|-------------------|---------|---------|
| | .000 | 10.000 | .000 | .000 | .165 | | BETA | PTN/P | |
| ○ | | | | | | | H/B | BDF CAP | |
| ◇ | | | | | | | ELEVON | .000 | 1.000 |
| | | | | | | | | | -13.000 |

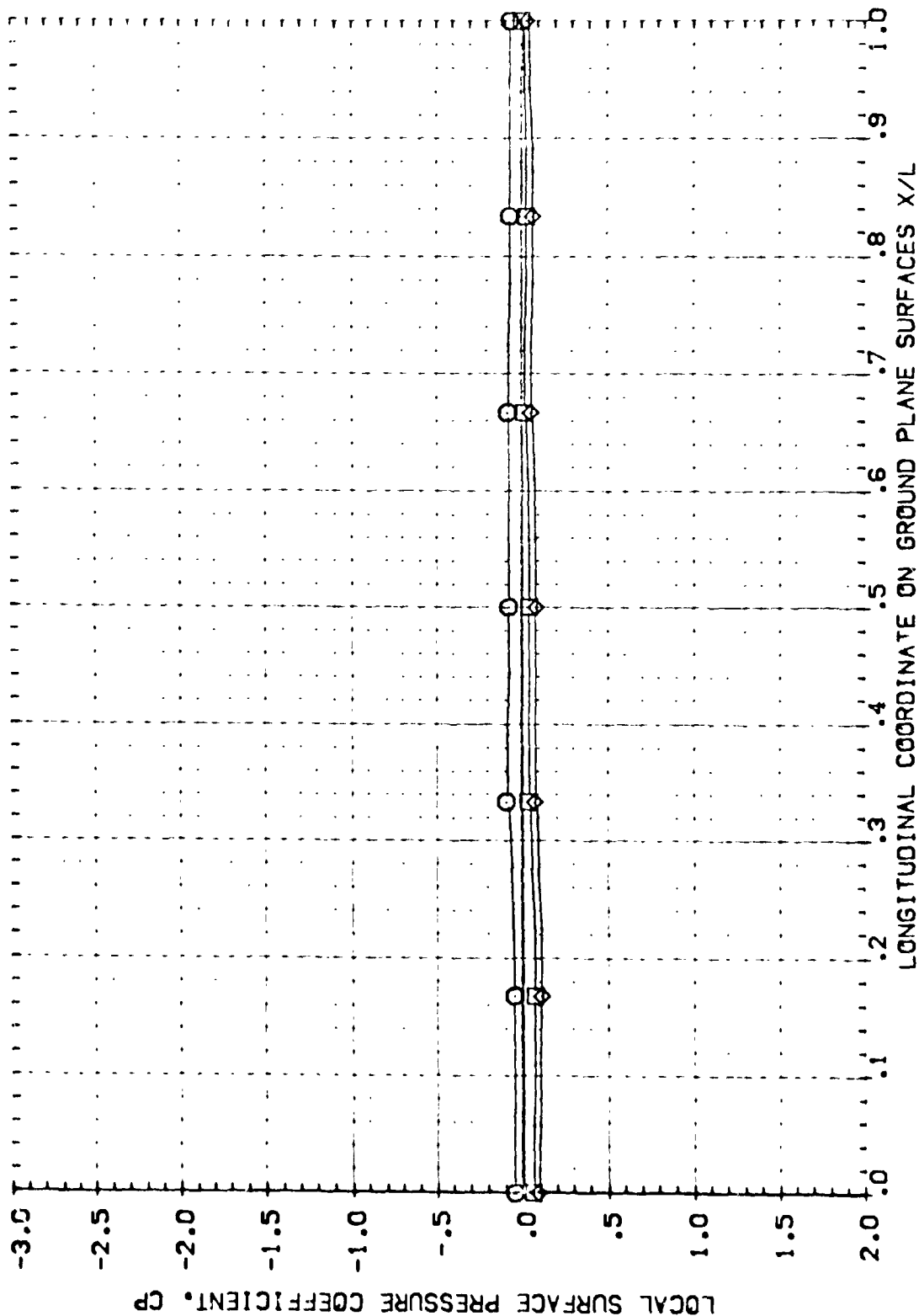


FIG 103 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.3

0A57-B B16C5F1 J42 W87E18 GROUND PLANE SRFACE (RDVG62)

| | | | | | | |
|--------|--------|------|------|-------------------|--------|---------|
| SYMBOL | ALPHA | 27/B | MACH | PARAMETRIC VALUES | | |
| | 9.500 | .000 | .165 | BETA | PTN/P | 1.500 |
| | 14.900 | | | H/B | BOFLAP | -18.000 |
| | | | | ELEVON | | .000 |

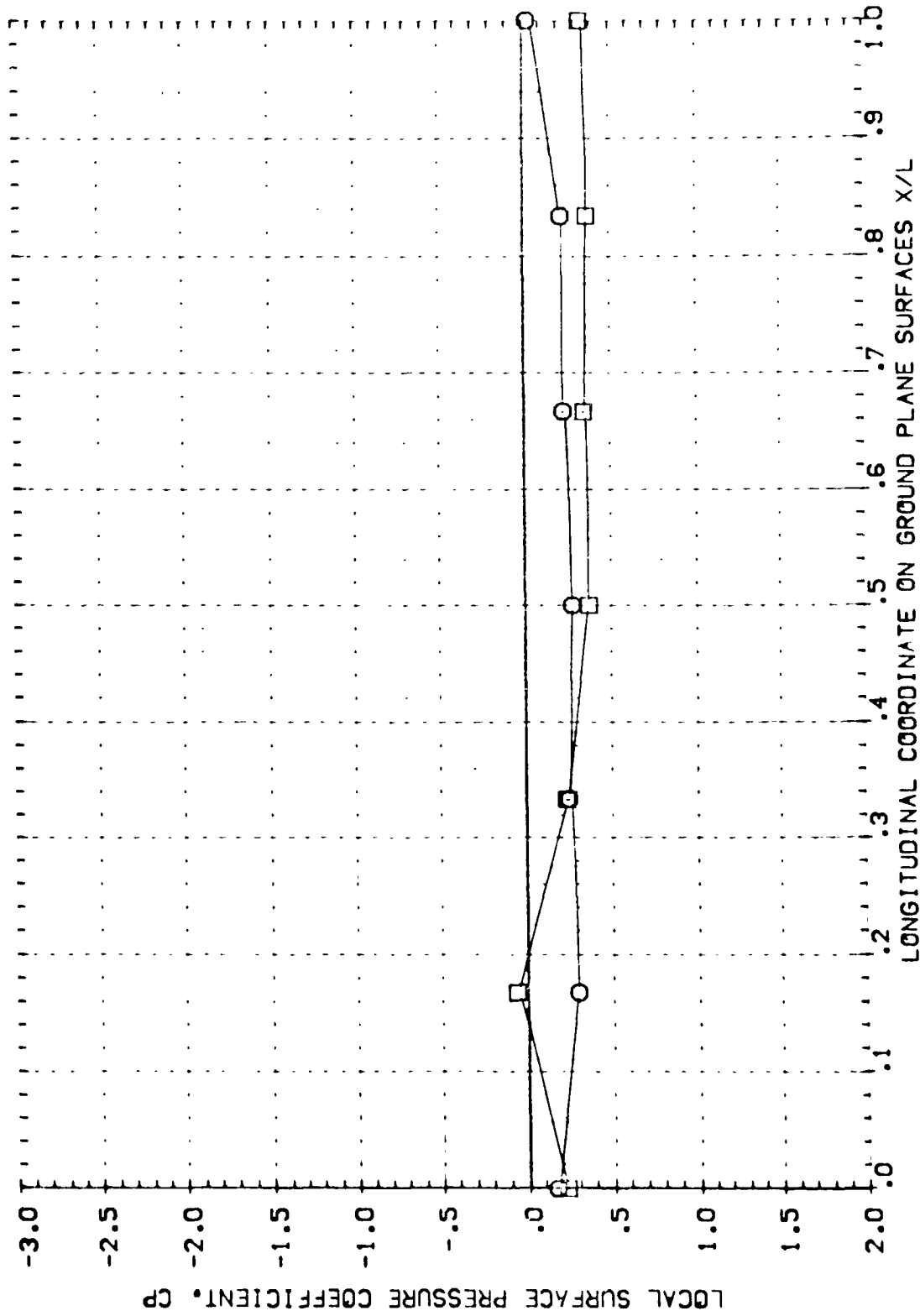


FIG 104 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.5

| | | | | | | |
|--------|--------|------|------|--------|-------------------|---------|
| SYMBOL | ALPHA | 2X/B | MACH | BETA | PARAMETRIC VALUES | |
| ○ | .000 | .000 | .165 | H/B | PTN/P | 1.500 |
| □ | 9.900 | | | ELEVON | BOFLAP | -18.000 |
| ◇ | 14.900 | | | | | |

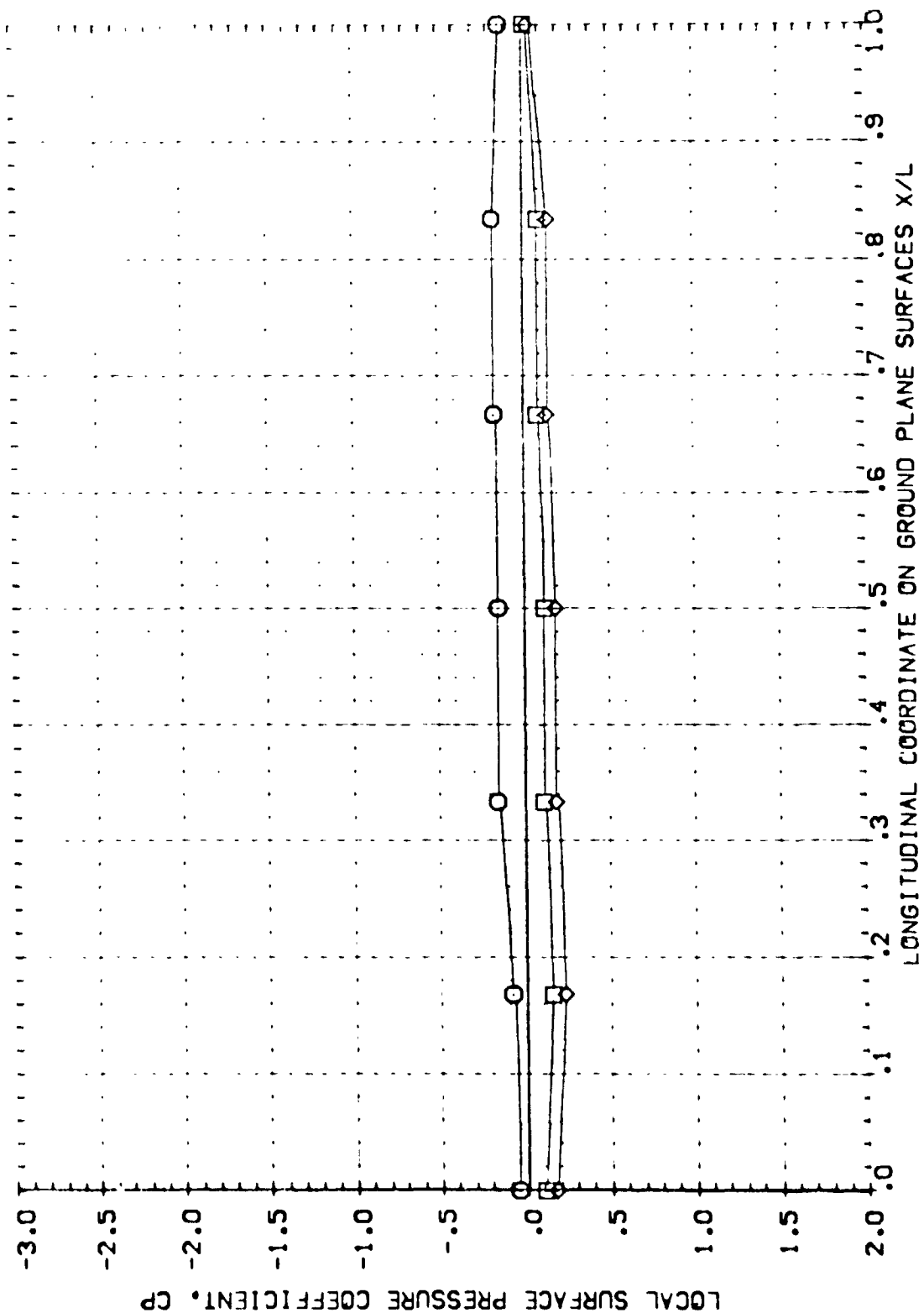


FIG 104 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT PTN/P = 1.5

0A57-B B16C5F1 J42 W87E18 GROUND PLANE SRFACE(RDVG68)

| | | | | | |
|--------|--------|------------|------|--------|-------------------------------|
| SYMBOL | ALPHA | 2 π /B | MACH | BETA | PARAMETRIC VALUES |
| ○ | .000 | .000 | .165 | H/B | .000 P _{TN} /P 1.500 |
| ○ | 9.500 | | | ELEVON | .286 BOFLAP -18.000 |
| ○ | 15.000 | | | | .000 |

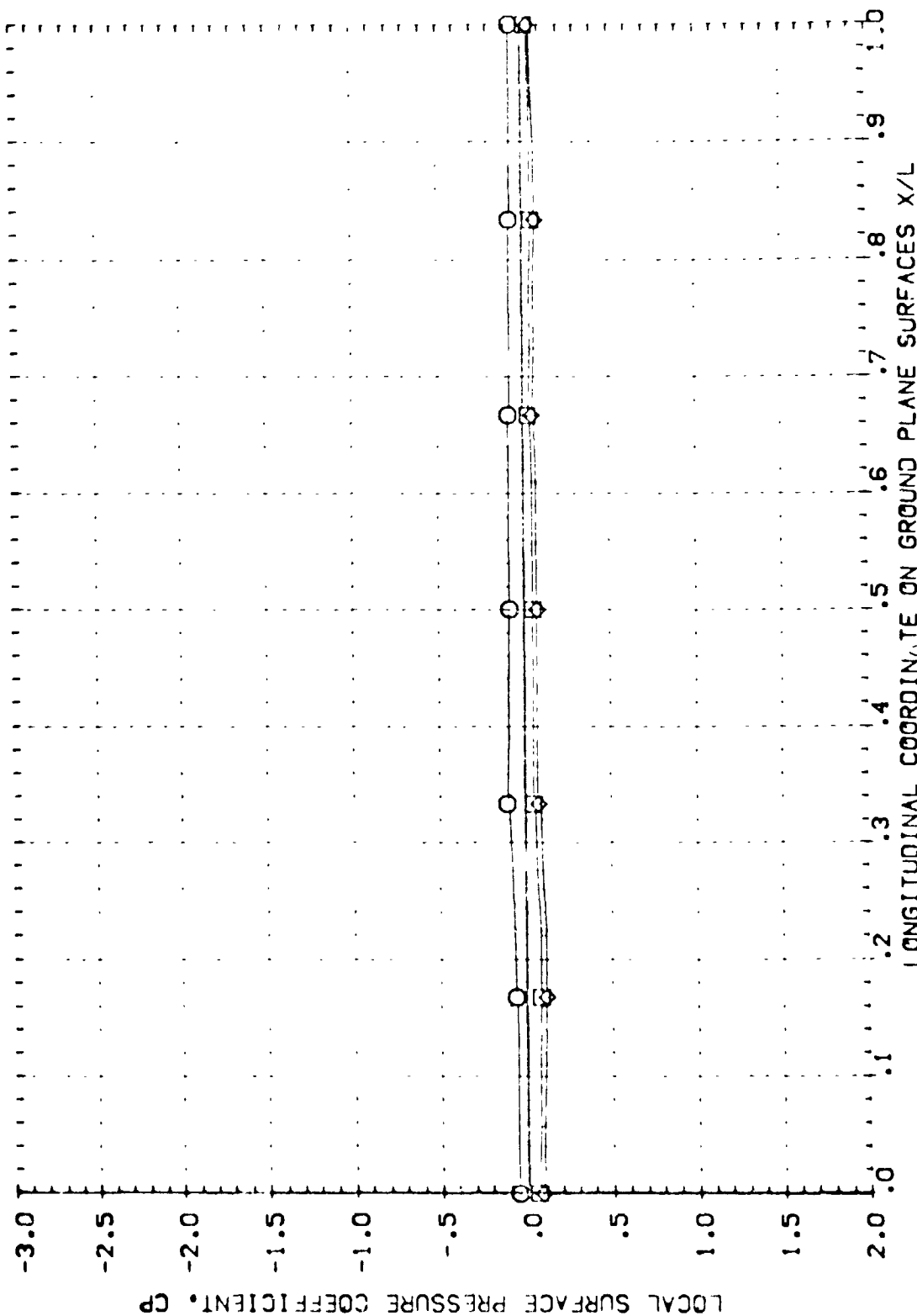


FIG 104 PRESSURE DISTRIBUTION ON GROUND PLANE SURFACE WITH J42 AT P_{TN}/P = 1.5